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DEVOLUTION OF FOREST RIGHTS AND SUSTAINABLE FOREST MANAGEMENT VOLUME 2: CASE STUDIES

PROPERTY RIGHTS AND RESOURCE GOVERNANCE PROJECT (PRRGP)

June 2012
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ACRONYMS AND ABBREVIATIONS

ACOFOP	Asociación de Comunidades Forestales de Peten
ADMADE	Administrative Management Design Program
BASIS	Broadening Access and Strengthening Input Market Systems
BOLFOR	Bolivia Sustainable Forest Management Program
CADT	Certificates of Ancestral Domain Titles
CARPE	Central African Regional Program for the Environment
CATIE	Tropical Agricultural Research and Higher Education Center
CBFM	Community-Based Forest Management
CBFMA	Community-Based Forest Management Agreements
CCBS	Climate, Community and Biodiversity Standards
CF	Community Forestry
CFM	Collaborative Forestry Management
CFUG	Community Forest User Group
CIFOR	Centre International Forestry Research
CO_2	Carbon Dioxide
COMIFAC	Central African Forest Commission
CPC	Communal People's Committee
CPI	Corruption Perceptions Index
CRB	Community Resource Boards
CRSP	Collaborative Research Support Program
DANIDA	Danish International Development Agency
DENR	Department of Environment and Natural Resources
DFO	District Forest Office
DRC	Democratic Republic of the Congo
ERA	Ecosystem Restoration Associates, Inc.
EU	European Union

FAN	Fundacion Amigos de la Naturaleza
FAO	Food and Agriculture Organization of the United Nations
FARM Africa	Food & Agricultural Research Management
FCI	Forest Carbon Index
FCPF	Forest Carbon Partnership Facility
FECOFUN	Federation of Community Forest Users, Nepal
FLA	Forest Land Allocation
FSC	Forest Stewardship Council
FYDEP	National Company for the Promotion and Development of the Petén
GBM	Green Belt Movement
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GMA	Game Management Areas
GNP	Gross National Product
GOI	Government of India
GPS	Global Positioning Software
GTZ	Deutsche Gesellschaft fuer Technische Zusammenarbeit, now Deutschen Gesellschaft für Internationale Zusammenarbeit (GIZ)
Ha	Hectare
HKm	Community-Based Forests
ICRAF	World Agroforestry Centre
IIED	International Institute for Environment and Development
INRENA	Instituto Nacional de Recursos Naturales
ITTO	International Tropical Timber Organization
IUCN	International Union for the Conservation of Nature
JFM	Joint Forest Management
JFMA	Joint Forest Management Area
JFMC	Joint Forest Management Committee
KFS	Kenya Forest Service
KWS	Kenya Wildlife Service
LGU	Local Government Unit

LULCC	Land Use Land Cover Change
MBR	Maya Biosphere Reserve
MELCA	Movement for Ecological Learning and Community Action
MENCT	Ministry for Environment, Nature Conservation and Tourism
MOA	Co-Management Agreements
MOU	Memorandum of Understanding
MTENR	Minister of Tourism, Environment and Natural Resources
NGO	Nongovernmental Organization
NLP	National Land Policy
NTFP	Non-Timber Forest Product
PES	Payments for Ecosystems Services
PESA	Panchayat (Extension to the Scheduled Areas) Act
PF	Panchayat Forests
PFM	Participatory Forest Management
PINFOR	Programa de Incentivos Forestales
PPF	Panchayat Protected Forests
RBC	Red Book Certificate
REDD/REDD+	Reducing Emissions from Deforestation and Forest Degradation
ROP	Republic of the Philippines
ROZ	Republic of Zambia
R-PIN	Readiness Plan Idea Note
R-PP	Readiness Preparation Proposal
RUPES	Rewarding Upland Poor for Environmental Services
SFE	State Forest Enterprises
SMFE	Small and Micro Forest Enterprises
SNNP	Southern Nations, Nationalities, and People
TLA	Timber License Agreements
TRAFFIC	The Wildlife Trade Monitoring Network
UK	United Kingdom
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNESCO	United Nations Educational, Scientific and Cultural Organization

UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees
UN-REDD	The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
URT	United Republic of Tanzania
USAID	United States Agency for International Development
VCS	Verified Carbon Standard
VPA	Voluntary Partnership Agreement
VRMC	Village Resource Management Committee
WGI	World Governance Indicator
WWF	World Wildlife Fund

BACKGROUND

STUDY OBJECTIVES AND APPROACH

This volume is a compendium of sixteen country case studies developed to inform a companion volume (Lawry et al., 2012) that assesses efforts over the past two decades to devolve forest rights to communities and indigenous peoples in Latin America, Asia, the Pacific Islands, and Africa. The countries are assessed based on a framework that aims to determine whether key tenure and policy considerations show promise as places for productive investment of the resources of the United States Agency for International Development (USAID). The framework paper of Volume 1 addresses recent trends in the forestry sector that are driving the current interest among international donors in identifying the combination of factors that contribute to successful devolution of forest tenure rights. It answers three questions:

1. What forest governance devolution approaches have been tried in Latin America, Africa, and Asia during the past 20 years?
2. How successful have the different approaches been, and what factors contributed to or hindered their success?
3. What are the implications of these experiences for efforts to conserve and sustainably manage forests, including activities associated with REDD+?

To answer these questions, forest governance devolution efforts are examined in 16 countries (listed in Table 0.1). We used the bundle of rights framework outlined by Schlager and Ostrom (1992) and elaborated upon by Barsimantov et al., 2011 to examine the mix of rights that nation-state governments have devolved *de jure* to communities and individuals in the case study countries.

The bundle of rights framework conceptualizes rights as being allocated in bundles that result in varying degrees of control over land and resources, as bulleted below:

- **Withdrawal rights** allow users to obtain resources at a rate specified by external authorities,
- **Management rights** allow the user group to define extraction rates and other management features, implying more rights than withdrawal rights,
- **Exclusion rights,** added to management rights, allow the user group to define who has access to resources, and
- **Alienation rights** involve the right to sell or lease the other three rights to the resource.

The package of all four rights defines a full property right, and when this right is shared by a group of people, a complete common property right is allocated (Barismantov et al., 2011: 344). Although not part of the bundle of rights, extinguishability, or the ease with which rights can be legally extinguished, is an important tenure attribute for sustainability, as it strongly influences whether the rights holder(s) believe they will benefit from forest conservation or enhancement activities. A chart that summarizes these rights for each of the major devolution approaches used in the 16 case study countries is included in Volume I of this study (Lawry et al., 2012).

TABLE 0.1: CASE STUDY COUNTRIES

Region	Countries
Latin America	• Bolivia • Brazil • Guatemala • Mexico • Peru
Asia	• India • Indonesia • Nepal • Philippines • Vietnam
Africa	• Democratic Republic of Congo (DRC) • Ethiopia • Ghana • Kenya • Tanzania • Zambia

To better understand the combination of factors that enhance, impede, or complicate processes of rights devolution and successful community-level forest management, we embedded the bundle of rights analysis within a broader systems framework consisting of forest, user group, forest tenure system, economic, and policy system attributes. We used this systems framework to structure our case study data collection efforts.

- **Forest attributes** (e.g., size, value to the community, value in global markets);
- **Policy system attributes** (e.g., laws and policies likely to influence decisions about forest management, quality of overall governance, quality of forest governance);
- **Forest tenure system attributes** (e.g., existence of legal pluralism [and extent to which there is tension between statutory and other legal systems], distribution of bundle of rights [to forest lands *and* trees], functionality of the *de jure* and *de facto* tenure systems);
- **User group attributes** (e.g., degree of social heterogeneity, internal power dynamics, power relative to external social actors); and
- **Economic attributes** (e.g., incentives to retain, enhance, or remove tree cover; alternative livelihood opportunities).

Each case study is organized into seven sections, including sections for each of the five attribues listed above, a section that lists key opportunities for tenure investments that could address the major gaps identified in the current tenure system, and a references section. In examining the approaches to devolution used in each country, we focused on those that have been most extensively applied or for which literature is most readily available as a completely comprehensive analysis of all devolution approaches used in each country was beyond the scope of this desk review.

It is important to emphasize that this study is one of a number of forest governance devolution studies that have recently been or are in the process of being conducted in Latin America, Asia, and Africa. It is, in consequence, an exciting time to explore this important topic, but also quite challenging to pull together the vast literature on forest governance devolution hat has emerged over the past two decades. The task is particularly challenging given the rapidly evolving body of evidence, with important new evidence being published or posted on the internet on a weekly, if not daily basis. We have sought to incorporate as much of this new evidence as possible into the cases studies included in this document as well as in the companion

framework document. However, given the rapid pace at which new evidence is emerging, we recommend that readers supplement their reading of these documents with a review of websites of organizations active in developing tenure-related materials. An exhaustive list of such organizations is not feasible to include here, but we provide a list of several key organizations along with the URLs for their websites in Table 0.2 to serve as a starting point for readers interested in obtaining up-to-date information on forest and land tenure.

TABLE 0.2: SAMPLE OF ORGANIZATIONS ENGAGED IN FOREST DEVOLUTION RESEARCH

Organization	Website URL
Center for International Forestry Research	http://www.cifor.org/
Food and Agriculture Organization	Governance of Tenure Program (http://www.fao.org/nr/tenure/en/)
International Forestry Resources and Institutions	http://www.sitemaker.umich.edu/ifri/home
International Institute for Environment and Development	Various programs examine issues related to forest governance http://www.iied.org/our-work
Rights and Resources Initiative	http://www.rightsandresources.org/
The World Bank	Various programs examine issues related to forest governance http://www.worldbank.org/
U.S. Agency for International Development	Various programs examine issues related to forest governance, but the USAID Land Tenure and Property Rights Portal is particularly useful as a source of data on forest and land tenure (http://usaidlandtenure.net/)

Note: Numerous international, regional, national, and local organizations and networks are engaged in or support research on forest governance in Latin America, Africa, and Asia. This list is meant to be indicative of the organizations participating in such work, rather than an exhaustive compendium.

We draw particular attention to the Rights and Resources Initiative's (RRI) extensive and on-going effort to document how rights to forested land are distributed in developing countries. RRI's (2012) report, "What rights?: A comparative analysis of developing countries' national legislation on community and indigenous peoples' forest tenure rights", which contains a very detailed examination of 27 countries' national laws pertaining to forest devolution and the rights that are granted through those laws, was published as we were finalizing the case studies included in this document. Although conducted independently, our study's findings mesh very closely with RRI's findings, an indication that the conclusions from both studies are robust.

KEY DEFINITIONS

For the purpose of this work, devolution is defined as "the transfer of rights and responsibilities [to forests] to local communities, groups, committees and households (Katila, 2008, p.11)," while tenure is "the system of rights, rules, institutions and processes regulating resource use and access" (Cotula and Mayers, 2009, p.3). Forest tenure is reliant on and conditioned by forest governance, which is defined in this paper as the process by which decisions are made about the use and management of forests (Cotula and Mayers, 2009).

EXPLANATION OF INDICATORS USED IN THE CASE STUDIES

In describing the attributes of the case study countries, we reference the World Bank's Worldwide Govenance Indicators (WGI), Tranparency International's Corruption Perception Index, and Resources for the Future's Forest Carbon Index (FCI) in order to facilitate cross-country comparisons of governance capacity and

potential for forest carbon investments. We highlight forest carbon investment potentials and activities in the case studies because much of the discussion around forest governance devolution in the past five years has been linked with concerns about how REDD+ activities might affect both livelihood opportunities of forest dwellers. To help the reader interpret the governance, corruption perception, and forest carbon indicators while reading through the case studies, we provide a brief description below of how each of these assessment tools is constructed.

WORLDWIDE GOVERNANCE INDICATORS

Forest governance systems are embedded in broader governance systems, and the extent to which forest governance devolution can be successful is dependent in part on the characteristics of the broader system in which it takes place. The World Bank (2011) has developed a set of six indicators, referred to as a group as Worldwide Governance Indicators (WGI), to help policy makers and practitioners assess the quality of governance in countries of interest to them, and to enable them to track changes in the quality of governance over time. In developing the WGI, Kaufman et al. (2010, p. 4) define systems of governance as "the traditions and institutions by which authority in a country is exercised." They argue that governance has three important aspects that the indicators need to capture: the "process by which governments are selected, monitored and replaced"; the government's capacity to "effectively formulate and implement sound policies", and the extent to which citizens and the state respect their governance institutions. The WGI has two indicators for each of these three aspects.

Process: Voice and Accountability and Political Stability and Absence of Violence/Terrorism are measures of the process by which governments are selected, monitored, and replaced. The Voice and Accountability indicator is a measure of the extent to which citizens have the ability to participate in selecting their government, as well as their ability to associate freely and engage freely in political speech. The Political Stability and Absence of Violence/Terrorism indicator measures the perceived stability of the government relative to the risk of violent overthrow.

Capacity: Government Effectiveness and Regulatory Quality are measures of the extent to which the government is able to develop and implement sound policies. The Government Effectiveness indicator reflects perceptions about the quality of the government and its capacity to carry out policies it commits to. The Regulatory Quality indicator measures perceptions about how well the government is able to develop and implement effective regulations and policies governing private sector behavior.

Respect: Rule of Law and Control of Corruption are measures of the extent to which the citizens and state officials respect the institutions that govern interactions in the public and private spheres. The Rule of Law indicator measures perceptions regarding the confidence that citizens and officials have that the rules will be upheld and enforced appropriately. The Control of Corruption indicator measures perceptions as to how extensively corruption pervades the public sector, where corruption is defined as the use of public power for private gain.

Each of the indicators is scaled to go from 0 to 1, with 0 indicating poor quality with respect to that aspect of governanceand 1 indicating the best quality. The indicators can be used (with caution) to assess changes within countries in the quality of governance over time. We used 2002 and 2009 as dates for conveying a sense of how the quality of governance as reflected in these six indicators has changed in recent years. We used 2002 as the baseline because any measures prior to that for the Democratic Republic of Congo would be meaningless given that it was undergoing a full-scale civil war in the preceding years. We used 2009 as the ending date because it was the most recent year for which data had been published at the time we collected the data for this report (2011).

CORRUPTION PERCEPTIONS INDEX

Public sector corruption can have substantial negative effects on efforts to devolve natural resource governance in developing countries (Nelson, 2009; Mayo-Anda, 2011; Palmer and Bulkan, 2010).

Transparency International (2011) defines corruption as "the abuse of entrusted power for private gain". It includes illegal activities by public officials such as requiring and accepting bribes, accepting kickbacks for issuing contracts, and embezzling public funds. Transparency International's Corruption Perceptions Index is a tool that can be used to identify relative differences among countries in terms of how corrupt they perceive their public sector to be. The Corruption Perception Index is based on data gathered through business opinion surveys and expert assessments. The index is scaled from 0 to 10, with 0 indicating that a country is perceived to be highly corrupt while a 10 indicates that a country is perceived to have very little corruption.

FOREST CARBON INDEX

In developing the forest attributes sections, we drew upon the literature related to REDD and REDD+ readiness efforts in each of the case study countries since REDD+ policies are likely to have a strong influence over forest management and governance in much of the developing world over the next few decades. To facilitate comparison across countries regarding their potential for forest carbon investments, Resources for the Future has developed a Forest Carbon Index (FCI) (Deveny et al., 2009). The FCI is a ranking system that permits the analysis of the relative capacity of countries to provide forest carbon credits, taking into account both economics and risks associated with investments.It is scaled from 0 to 100, with 100 being assigned to those areas with the highest capacity to provide forest carbon credits. The FCI provides a rough estimate of forest carbon costs, the potential supply available, and the potential revenue that can be generated from the sale of forest carbon credits in localized sites or countries as a whole. It also allows for comparisons across sites and countries and thus permits potential investors or forest carbon project developers to identify the most promising countries or areas within countries for investing in forest carbon.

The FCI is a composite measure that takes into account the profit potential and risks associated with forest carbon investments at localized and national scales. Site-specific and national level profit potentials "describe the ability of any location to generate abundant, low-cost forest carbon credits (Deveny et al., 2009, p. 10), while the risk factor quantifies the barriers to establishing functional carbon credit markets in a particular site or country. The profit potential figures are calculated by multiplying the proft margins by the quantity of forest carbon, using a value of $20 per ton of carbon dioxide equivalent in greenhouse gas emissions for calculating the value of the carbon.

As used in FCI calculations, profit potential "represents the net profit (in dollars) that could be obtained by selling all the potential forest carbon credits from a given location" (Deveny et al., 2009, p. 16). This net profit is a function of the forest carbon supply, the forest's carbon content, and the opportunity costs associated with leaving the land (or returning it) to forest cover. The opportunity cost is a valuation of the land that estimates "how much revenue the next highest-valued use could generate" (Deveny et al., 2009, p. 21). Areas with low opportunity costs are likely to be more affordable locations for investing in forest carbon, if risk factors are held equal.

The risk factor portion of the FCI is a composite of 3 factors – governance, ease of doing business, and readiness – and is calculated using weights of 0.4 for governance and ease of doing business and 0.2 for readiness. Worldwide Governance Indicator scores (described earlier in this report) were used as input for calculating the governance factor. The World Bank's Ease of Doing Business Index was used for the ease of doing business factor incorporated into the FCI. This index measures the extent to which a country's regulatory system inhibits or facilitates the process of establishing and operating a business. Resources for the Future developed its own readiness factor, which is based on a combination of the country's capacity to carry out monitoring using remote sensing and its experience with environmental markets.

FCI scores are calculated by multiplying the area's profit potential by the country's risk factor. The resulting scores are then normalized on a scale from 0 to 100, with 100 being assigned to the country with the highest score. National level FCI scores are calculated by aggregating the localized data for profit potential and multiplying the aggregated figure by the country's risk factor.

When assessing a country's potential as a place for investing in forest carbon, it is important to look at the profit potential and risk factor scores as well as the country's FCI. For example, the DRC has 24.7 percent of the total global profit potential associated with its forest carbon stocks, substantially more than Brazil, which has 17.4% of the global profit potential associated with forest carbon stocks. However, the DRC has an extremely high risk factor (.003 on a scale of 0 to 1, with 0 being lowest and 1 being highest), whereas Brazil's has a risk factor of 0.54. The combination of high profit potential and relatively low risk give Brazil an FCI score of 100, while the DRC's high risk factor brings its FCI score down to 91. In practical terms, Brazil's higher FCI score means that it has higher capacity than DRC to be a major supplier of forest carbon for carbon markets.

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1.0 BOLIVIA

1.1 FOREST ATTRIBUTES

1.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Bolivia is ranked 15th in the world in forest cover. The majority of forests are found in lowland Bolivia, ranging from humid evergreen forests in the north, to transitional deciduous forests further south, to dry forests in the south. A total of 37 million ha are primary forest and 20 million ha are naturally regenerated (FAO 2010). The Northern Bolivian Amazon is lowland evergreen rainforest, dominated by broadleaf communities interspersed with savannahs and inundated alluvial ecosystems. This lowland rainforest receives 1,300 to 2,300mm of rainfall annually and contains a high density of Brazil nut trees (*Bethollia excelsa*), rubber (*Hevea brasiliensis)* and high value timber such as mahogany (*Swietenia macrophylla*), Spanish cedar (*Cedrela Odorata)*, South American oak (*Amburana cearensis*). The inundated areas are home to several palm species. Further south, in the tropical moist deciduous forests of Santa Cruz, there are over 100 species of valuable timber that have made the southeastern region the most important for timber production in the country. The dry forests, found even further south, have been heavily affected by human intervention and are home to several structural types such as thorn forest, tall forests (20-25m trees) with dense woody vines, and grasslands and cerrado woodlands.

The annual deforestation rate in Bolivia from 2005-2010 was estimated at 0.53 percent. The greatest deforestation has been in the alluvial plains east of the Andes, where commercial agriculture for soy and other crops has expanded since the 1990s. Further east, the rolling hills of the Chiquitania forest are threatened by growing cattle ranching and commercial agriculture. Colonists and small farms are threats to many areas north and west of Santa Cruz and in lowland Cochabamba. In the Chapare, highly diverse montane cloud forests are cleared for coca fields, although the labor intensity of coca production results in limited-size clearings. Deforestation in the Northern Bolivian Amazon is minimal, with a forest cover around 92-95 percent. The primary threats to forests in this area are fires from swidden agriculture and clearing for cattle ranches, road improvements that have assisted the influx of new populations, and selective logging.

1.1.2 CARBON STORAGE CHARACTERISTICS

It is estimated that Bolivia has between 2.5 and 9.2 billion metric tons of carbon (Gibbs 2007) (4 billion metric tons according to FAO) that are found in its 57 million hectares of natural forest, 2.5 million ha of other wooded lands, and 49 million ha of other land. The primary uses of forest land are selective harvesting of high-value timber, non-timber forest extraction, and smallholder settlements. The primary alternative land uses are commercial agriculture and cattle ranching.

1.1.3 REDD+ PLANNING AND ACTIVITIES

Bolivia has completed a Readiness Plan Idea Note (March 2008) and as of 2011, was working on its Readiness Preparation Proposal (R-PP). Bolivia is a member of the UN-REDD Programme and as of September 2011 was one of thirteen countries receiving UN-REDD Programme national support. Major REDD projects in Bolivia include Exelon Amazon that includes Ecuador and Peru and is supported by WWF, Chicago Field Museum, and the Exelon Corporation; the REDD Amazonia project, supported by the Gordon and Betty Moore Foundation, the Governments of Norway and Australia, and the Fundacion Amigos de la Naturaleza (FAN); and the long-term Noel Kempff Mercado Climate Action Project supported by several national and international governments, private corporations, and NGOs.

1.2 POLICY ATTRIBUTES

1.2.1 HISTORICAL CONTEXT

Bolivia has a long history of the majority of resources and decision making being in the hands of the few. It also has a history of popular uprisings. Recent policies demonstrate that the peasant and indigenous majority are finally making gains on equal distribution of rights. The 1994 Popular Participation law decentralized many government functions to municipalities, bringing decision-making closer to home. The 1996 Agrarian Reform and Forestry laws promised a significant amount of land and resource rights to peasant and indigenous communities, and generated the rules by which forests could be managed. While devolution of rights to land was largely prompted by social movements, the technical and conservation components of the Forestry Law were influenced by international interests in sustainable forest management, largely funded by USAID. In 2007, Bolivia signed the UN Declaration of Indigenous Rights, solidifying its position on protecting traditional land uses.

In Bolivia, the National Forestry Superintendent retains rights to develop forest management laws and approve forest management plans by all property owners. Although municipalities have *de jure* devolution of many rights via the 1994 participation law, within the forest sector they are essentially limited to assisting the central government in monitoring and enforcement of the national forestry law and helping communities write their management plans. They are, however, able to propose municipal lands to be distributed to community associations under 40-year concessions. Municipalities receive 25 percent of commercial logging revenue received by the central government to assist these activities.

1.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Bolivia's relations with external businesses and organizations have become increasingly tentative. The country is scored as slightly negative on all Worldwide Governance Indicators (see Table 1.1), with the Rule of Law being the lowest. All indicators except for Control of Corruption have decreased since 2002. The difficulties Bolivia is having with rule of law and regulatory quality are worrying signs for the likelihood of success for forest governance devolution activities and programs.

TABLE 1.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

Indicators (-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	-0.08	+0.07	-
Political Stability	-0.82	-0.30	-
Government Effectiveness	-0.72	-0.26	-
Regulatory Quality	-0.98	+0.01	-
Rule of Law	-1.22	-0.35	-
Control of Corruption	-0.71	-0.94	+
Corruption Perceptions Index = 2.8 (Rank = 110 of 178) (Transparency International 2010)			

Forest-related policies are fairly well-developed in Bolivia, with significant devolution of management rights to communities and general concordance among the agrarian reform, popular participation, and forestry policies. While the rules and regulations in these policies are relatively clear, they have not been fully implemented or enforced. For instance, land titling has only been partially completed in one department, 15 years after the new agrarian reform law, and control of forest management practices is minimal based on limited resources extended to the national forestry superintendent for enforcement. Where implemented, however, land titling generally involved community members when establishing borders in the field and titles noted whether neighboring communities agreed or remained conflicted about the new boundaries. One demonstration of how forest policies and enforcement are not entirely clear is in the Northern Amazon, where communities were given an average of 500 ha per family to be part of communal title. In some

communities, this has been interpreted as each family receiving 500 ha, resulting in subsequent internal land divisions, and in some cases the informal sale of plots to individuals outside the original communal roster.

In most areas, municipalities play a little or no role in assisting the national government in forestry education and policy enforcement. There has been limited stakeholder participation in the creation of these policies, although some outreach has been undertaken to inform stakeholders of new rules and regulations.

Lastly and probably most importantly, is the reality that there is considerable struggle among political parties in Bolivia, often resulting in strikes, road closures, and political uprisings. An example comes from 2008, when groups that support private enterprise and generally disagree with current national policies invaded several national offices, including the land titling office, and prompted revolts in towns throughout the lowlands, closing roads and airports for days and resulting in numerous deaths.

1.3 TENURE ATTRIBUTES

1.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

In Bolivia, the state owns all natural forests, although communities and private groups may obtain titles with resource use, management, and exclusion rights. No group has alienation rights. There are several types of land tenure including agroextractive communities, indigenous communities, concessions for commercial logging, and concessions for associations of rural individuals on municipal land. Concessions are publicly owned and allocated on 40-year cycles and concessionaires have exclusive rights to these concessions. Communal and indigenous lands have use, management, and exclusion rights although they are subject to strict state control over timber management. To extract timber, all landowners and concessionaires must have annual and long-term forest management plans approved by the National Forestry Superintendent. To date, however, there are no official regulations for extracting nontimber forest products. Whether on communal property or within a concession, the forestry law provides no specific regulations for non-timber product extraction, although there have been efforts in the past few years to define a system for demarcating and controlling product extraction. Similarly, although titled agroextractive and indigenous communities have clear rights to their non-timber forest products, access to products on concession lands are unclear and have generally been managed through a rent system. The Forestry Law says only that timber concessionaires with approved forest management plans could allow others to harvest NTFPs under 'auxiliary contracts,' although no guidelines are provided. This is a particularly noteworthy detail for the Northern Amazon, where income from Brazil nut collection is substantial.

1.3.2 TENURE SECURITY

Land titles that have been devolved to communities in Bolivia are expected to generate long-term security. Communities and private landowners who have not yet finalized land titles or who possess 40-year concession rights, however, are still insecure about what areas will be allotted to them.

1.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Local communities have exclusion rights, although this can sometimes be difficult to enforce due to confusion over new property lines that divide historically used areas by concessions and/or communities and pressures from encroachment. Pressure from the expansion of timber companies, agro-industry and smallholder colonization generates concerns about property rights. Peasant and indigenous communities in Bolivia have received significant support in establishing elected communal committees that are formally recognized by municipal and state governments for requests and grievances. Presidents of these committees regularly participate in municipal and sometimes state meetings. The reality of whether communal grievances are addressed, however, often depends on the political relationship between the community and the authorities and on the ability of authorities to respond to issues often far removed from headquarters and roads. Apart from government agencies, there are several NGOs that support communal land and resource

rights. These organizations sometimes help local communities present complaints. In fact, most communities in the Northern Amazon work with some sort of advocacy group for natural resource management.

1.4 USER GROUP ATTRIBUTES

1.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

Peasant and indigenous communities throughout lowland Bolivia rely on forest resources as a significant asset for their livelihoods. In the Northern Bolivian Amazon, user groups depend almost wholly on the forest. Brazil nut harvesting and selective logging provide substantial income to families, and the extraction of other nontimber and agroforestry products such as rubber, palm fruits and hearts (*Euterpe precatoria, Bactris gasipaes,* and others), copoazu (*Theobroma grandiflorum*), cacao, annatto (*Bixa orellana*), citrus fruits, and papaya, provide additional income. Communities also rely primarily on hunting for their protein intake, and thus depend on an intact forest for diverse and abundant wildlife. Throughout lowland Bolivia, rural and indigenous communities practice small-scale ranching and swidden agriculture for banana, yucca, sugar cane, corn, rice, and vegetables. While these crops are primarily used for household consumption, some families sell extra products at local markets and others are increasingly relying on commercial agriculture for income. Lastly, logging companies and communal associations with concessions depend entirely on the Bolivian forest for natural timber.

1.4.2 POWER RELATIONS

Indigenous and peasant communities currently have substantial power within Bolivia under the presidency of Evo Morales. Many aspects of governance have been devolved to municipalities through the Participation Law of 1994, and land titles and forest management have been increasingly distributed based on the Agrarian Reform and Forestry Laws of 1996. This change has not come easily or smoothly, however. Historically, and still in many regions, resource management and decision-making authority rested in the hands of a few. In the Northern Amazon, logging companies controlled a significant portion of land in 40-year concessions and Brazil nut harvesting (and previously rubber) was organized in large estates called barracas that had *de facto* exclusion rights where workers collected resources under a feudal system. In other parts of lowland Bolivia, large ranches and other private properties have long been owned by the wealthy and commercial agriculture is growing in power. Lastly, while peasant and indigenous communities that engage in forestry have received substantial rights to land and have a significantly greater voice in governance than historically, they are still reliant on timber companies for much of the timber extraction and on NGOs for training and administration.

1.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

Bolivia's forestry sector has received substantial support from international organizations such as the USAID BOLFOR project that began in 1994 to support research, technical forest management training, policy development, and certification, among other things. There are also substantial interests in increasing mechanized agriculture and ranching. To a lesser extent, some international and national NGOs prioritize conservation for biodiversity protection through protected areas and ecotourism.

1.5 ECONOMIC ATTRIBUTES

The Forest Carbon Index shows Bolivia as having a low opportunity cost for retaining forests, with most land valued between $150 and $500 per ha. Deveny et al. (2009) calculate that Bolivia holds 3.9 percent of the global profit potential from carbon investment. It is the sixth highest (tied with Peru) holder of global potential profit from forest carbon investments in the world after the Democratic Republic of the Congo, Brazil, Angola, the Central African Republic, and the Republic of Congo. Bolivia has a Forest Carbon Index (FCI) score of 94, only slightly lower than Brazil and Peru. Its high forest carbon profit potential coupled

with a moderate risk factor (0.36 on a scale of 0 to 1, with 0 representing the most risk and 1 indicating the least risk) makes it a good candidate for forest carbon investments.

The greatest returns for retaining land in forest cover will likely be in the Northern Bolivian Amazon, where soils are inapt for commercial agriculture, and in the forestry concessions and protected areas throughout lowland Bolivia. Potential methods for retaining land are through REDD payments supporting alternative income generation for communities, payments for ecosystems services (PES), assistance with marketing certified forest products, and improved forest governance.

1.6 OPPORTUNITIES FOR TENURE INVESTMENTS

Bolivia has recently engaged in extensive devolution of rights (including use, management, and exclusion) to high-value forest land products to indigenous and peasant communities. Many of these reforms have been supported by USAID-funded activities carried out under the BOLFOR I and II projects. However, as the case study indicates, forest tenure reform in Bolivia is still in a fragile state and additional investments are needed to strengthen existing institutions and expand the geographical reach of titling programs. Major gaps in Bolivia's forest tenure system include the following:

- Conflicts and confusion over rights to brazil nuts and other NTFPs
- Overlaps in forest product concessions and indigenous territories on reserved lands
- Limited geographic coverage of community titling
- Limited capacity (and in some cases, lack of political will) of Bolivia's forestry service to enforce forest regulations
- Dependence of communities on timber companies and NGOs for marketing expertise
- Costs associated with completing management plans

The following tenure-related investments could help address these gaps.

- Support for forest code reforms that would clarify rights to brazil nuts and other nontimber forest products. A complementary activity would consist of support for multistakeholder dialogues and forest code reform that would identify solutions to the problem of forest product concessions that overlap indigenous territoris on reserved lands.
- Support for pilot projects aimed at developing management plan processes that draw more heavily upon local ecological knowledge and that are better tailored to local community capacity levels, but which can also provide safeguards to minimize deforestation activities.
- Support for expanding the capacity of municipal and community organizations to take a stronger role in forest law enforcement and provision of services that will enable forest inhabitants to capture more benefits from their forests while maintaining the required levels of forest cover. Accomplishing this would likely require engaging in dialogure with the Bolivia forestry service to identify those tasks that could be delegared to the local level.

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2.0 BRAZIL

2.1 FOREST ATTRIBUTES

2.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Brazil has 477 million ha of primary forest, 36 million ha of naturally regenerated forest and 7 million ha in planted forest (FAO). The tropical forests of the Amazon cover 405 million ha and can receive up to 2,000 mm of annual rainfall (Pereira et al., 2010) 63 percent of the Brazilian Amazon is composed of dense, open and seasonal lowland tropical forests, while another 22 percent is savannah and natural grasslands. The final 15 percent has been deforested. These forests contain several highly valuable timber species such as *Tabebuia serratifolia, Tabebuia impetiginosa, Cedrela odorata, Mezilaurus itauba, and Corida goeldiana*. They are also home to internally-important nontimber forest products, such as the palm fruit and seeds of açai (*Euterpe oleraceae)*, babacu (*Orbignya martiana*), and buriti *(Mauritia flexuosa)*, the oils from andiroba (*Carapa guianensis*) and copaiba (*Copaifera spp.)*, rubber (Hevea brasiliensis), and Brazil nut (*Bertholletia excelsa*). Approximately 6.3 billion ha of the planted forests are pine and eucalyptus species.

The population density of Brazil's Legal Amazon is 4.7/km^2 with the majority living in urban areas. The Legal Amazon is defined by the Brazilian government and includes the states of Acre, Amazonas, Amapa, Para, Rondonia, Roraima, Tocantins, Mato Grosso, parts of Maranhao and a small part of Goias. It includes approximately 5 million sq km (59 percent of Brazil). Brazil also has broadleaf evergreen Atlantic forest (28.8 million ha), pantanal wetlands (8.55 million ha), savanna grasslands (70 million ha), and arid caatinga (46.8 million ha) (Blaser et al., 2011).

Deforestation and degradation of forests in the Amazon account for over 70 percent of Brazil's carbon emissions. As of 2009, approximately 15 percent of the vegetation of the Amazon was deforested, although the deforestation rate had decreased to only 36 percent its average rate from 1996-2005. Over 50 percent of the deforestation between 2001 and 2005 can be attributed to large ranchers and agro-industry, the latter of which has often benefitted from government incentives. Other causes of degradation and deforestation include timber harvesting, infrastructure development (such as road building), and small scale agriculture. Timber harvesting is generally selective, with three to seven trees cut per hectare. This practice can result in forest degradation, but generally does not result in deforestation. While road construction has often been followed by forest degradation, the Western Brazilian Amazon in particular is still relatively remote as compared to other tropical forest areas.

2.1.2 CARBON STORAGE CHARACTERISTICS

Brazil has the largest forest carbon stocks in the world, with an estimated 55-83 billion metric tons found in its 519 million hectares of forest (Gibbs, 2007). The majority of Brazil's forests are found in the tropical lowlands of the Amazon and the Atlantic coast. Approximately 44 percent of the Amazon is in protected areas called Indigenous Territories or Conservation Units. The primary alternative uses of forestlands are cattle ranching, soy farming, subsistence-based communities, and timber operations.

2.1.3 REDD+ PLANNING AND ACTIVITIES

Brazil is not engaged with the Forest Carbon Partnership or UN-REDD Programme as it has established its own Amazon Fund (with funding primarily from the Norwegian government) to finance REDD+ projects and a National Plan on Climate Change that commits to reducing the annual average deforestation rate by 80 percent by 2020. It has also participated in a handful of carbon sequestration projects as a result of the Kyoto

Protocol and the voluntary carbon market. As of 2009, at least 93.6 million metric ton of CO_2 were sold from Brazil, 21 percent due to forestry projects (10 percent reforestation/afforestation, 7 percent REDD projects, and 3 percent improved forest management).

As of 2010, there was one forestry project based on the Clean Development Mechanism in the Southeastern region of Brazil. In the voluntary market, four reforestation projects were in process at this same time period with the Climate, Community and Biodiversity Standards (CCBS) certification. Brazil's largest project is the Juma Sustainable Development Reserve Project, covering almost 590,000 hectares and certified by the Climate, Community and Biodiversity Standards (CCBS). CCBS has also certified a project in the cerrado of Tocantins state. In the state of Mato Grosso there are nine projects in private areas that are part of the Programa Brasil Mata Viva sponsored by the Mato Grosso government.

2.2 POLICY ATTRIBUTES

2.2.1 POLICY CONTEXT

Brazil has long responded to concerns for rural poverty and justice, generating policies to distribute land to peasants since the mid-1800s. An important component of the 1850's Land Law which still has wide-ranging effects in the Amazon is the recognized right to possess land if it is put into productive use, and the sanctioning of taking lands that have not been placed into productive use (where productive typically means converted to farmland or pasture). This has generated the foundation for current landacquistion behavior. Several settlement projects were implemented through the 1900s, all with the intention of providing land to the landless and securing occupation of the Amazon forest. It is only recently that land titling regulations have been motivated by conservation objectives and indigenous rights. These new types of regulations have halted land settlement programs and place more emphasis on protected area development and securing land use rights for indigenous and agroextractive communities.

Forest conservation has also been a component of national policy since the mid-1900s. The Forestry Code of 1965 is still the foundation of forest management in Brazil and was developed to promote forestry as well as conservation of forest resources. This code introduced the obligatory Legal Reserves and Permanent Conservation areas for all rural properties as well as the requirement to develop land use plans prior to any forest resource extraction. Two laws in 1998 and 2000 established important instruments for enforcing forest management laws by creating the national conservation unit system and recognizing environmental crimes. A 2001 law increased the Legal Amazon reserve requirement for private properties which stipulates that farms must maintain 50 - 80 % of their land in forest cover. A new Forest Code, which would roll back some of the restrictions on tree clearing, is currently under consideration. Agricultural and livestock organizations are in favor of the proposed changes, while local and international environmental groups oppose them.

Forest management decisions are shared among the federal and state governments, with many activities largely devolved to states and municipalities. While the national government generates overarching rules such as the placement of indigenous territories and protected areas, and conducts monitoring and enforcement, states have parallel departments that develop more specific regulations and enforcement programs.

2.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Brazil has relatively positive governance indicators (see Table 2.1), with the highest ranks in Voice and Accountability and the lowest in Rule of Law. All indicators have improved since 2002, except for Regulatory Quality. This positive governance structure sets the stage for a potentially effective program of forest governance devolution investments. Brazil's Corruption Perception Index score is 3.7, giving it a rank of 69 out of the 178 countries included in the index. This score is comparable or slightly higher than the majority of Latin American countries.

TABLE 2.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

Indicators (-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	+0.55	+0.33	+
Political Stability	+0.29	-0.16	+
Government Effectiveness	+0.08	-0.04	+
Regulatory Quality	+0.18	+0.23	-
Rule of Law	-0.18	-0.34	+
Control of Corruption	-0.07	-0.13	+

Corruption Perceptions Index = 3.7 (Rank = 69 of 178) (Transparency International 2010).

Forest governance in Brazil has dramatically improved in the past decade. According to Nepstad et al. (2009), the rules are clearer, it has become easier to identify illegal landholders, prosecution is more streamlined, and the cultural fear of land title legalization is subsiding. Since 2005, Brazil has expanded the amount of Amazon protected areas from 1.26 to 1.82 million km^2 and improved the enforcement of these boundaries. The Brazilian government and several NGOs have made significant advances in detecting deforestation and degradation through remote sensing and have been using this information to enforce forest management laws. Those who have contributed to deforestation, including government employees, have been imprisoned. A 2008 push to register legal properties and publicly announce illegal holdings focused on municipalities with the highest deforestation rates.

2.3 TENURE ATTRIBUTES

2.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

The Brazilian government owns rights to forest resources, although many tenure types allow communities management and exclusion rights. In the Legal Amazon, 44 percent of land has been placed into Indigenous Territories or Conservation Units. Private land occupies 23 percent of the Amazon and Rural and quilombola (slave descendent) settlements and military areas occupy 6 percent. The final 27 percent of the Brazilian Amazon is still in dispute. Indigenous and quilombola communities have use, management, and exclusion rights of their forest resources, although they still must create forest management plans to commercialize their forest resources. Conservation Units can be further divided into Sustainable Use and Integrative Protection areas, the first of which allows for settlements and sustainable use. Extractive Reserves and Sustainable Development Reserves, two types of Sustainable Use units, are available on renewable concessions to associations of people who create a sustainable natural resource use plans. Agroextractive and forestry settlements have permanent usufruct rights that can be requested by associations of families, where they can maintain their homes and sustainably use forest resources. The titles to these lands are given communally, allowing residents to exclude other users but negating alienation rights. Private landowners are required to maintain 80 percent of their land in forest, although a proposal to reduce this percentage is under review. Otherwise they hold a full bundle of rights. As of 2007, Brazil began granting 40-year concession rights for sustainable timber harvesting within national forests. The concessionaires only possess use and exclusion rights and must adhere to annual management plans developed (rather than just approved) by the federal forestry service.

2.3.2 TENURE SECURITY

Land rights are generally assumed to have long-term security, although rules in some areas, such as along the transamazon highway, are difficult to enforce due to invasions, boundary disputes and encroachment.

2.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Private landowners have full property rights. Concessionaires, indigenous groups and traditional forest communities have exclusion rights, although this can sometimes be difficult to enforce due to encroachment. While communities in Brazil have usually organized to protect their exclusive rights, they have often relied on the assistance of government and non-government organizations and international individuals to help publicize the encroachment and violence associated with land disputes. Several NGOs in the Brazilian Amazon support this cause. The federal National Foundation for Indians directly helps enforce boundaries for indigenous territories while the federal environmental agency does the same for extractive reserves.

2.4 USER GROUP ATTRIBUTES

2.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

Several user groups depend almost entirely on the forest for their livelihoods. Agroextractive and indigenous communities rely on forest resources for building materials, food (hunting, fishing, and livestock roughage), medicine, and income from timber and nontimber forest resources. Many communities have a long history of depending on the commercial sale of nontimber resources such as rubber, Brazil-nut, açai and other palm fruits. As of 2007, eleven communities were also attempting communal-forest management to selectively log high-value timber species. Timber companies also rely on the forest for high-value timber. Colonist communities, while generally focused on small-scale agriculture, rely on forests for some nontimber forest products and maintenance of water resources.

2.4.2 POWER RELATIONS

Several interest groups interact within the Brazilian Amazon. Commercial agriculture, cattle ranchers and large timber operations have generally had the most power, often backed by federal incentives. Illegal timber harvesters have also maintained significant power due to their resources, willingness to use violence, and invisibility, while small-scale agricultural producers have continually encroached on forests used by extractive communities. In the last couple of decades, however, local user groups such as the rubber tappers union and indigenous communities have gained power through organizing and collaborating with international and regional NGOs. With the support of these external individuals and organizations, extractivist and indigenous groups have voiced their land needs and obtained substantial use rights. At the same time, violent opposition to these groups has resulted in several deaths of prominent supporters of rural land rights.

2.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

International interest in the Amazon has long been extensive. As the largest tropical forest in the world, it has garnered attention of virtually every international conservation organization interested in biodiversity conservation. Its uniqueness and the general stability of Brazil as a country have also generated substantial interest in ecotourism and recreation. The numerous indigenous groups (some with little contact with the outside) and forest-based communities have also attracted the attention of social justice organizations who want to protect their access to quality forest. The massive size of land and water resources and the extent of government incentives, however, have also intrigued commercial agriculture businesses – although the international market for these products has currently decreased. There are also concerns about international and national policy stances to create large dams along Amazonian tributaries and build large highways connecting the inner-Amazon forest with Atlantic and Pacific ports; both types of projects are expected to ultimately result in increased forest conversion.

2.5 ECONOMIC ATTRIBUTES

Grieg-Gann (2008) found that opportunity costs for seven likely alternative land use scenarios, excluding one-off timber harvesting, had per hectare opportunity costs ranging from as low as $3 (for small scale beef cattle, manioc and rice, and perennials such as pineapple, sugarcane, and bananas) to as high as $3,275 for soy bean fields. The opportunity costs for dairy are about $172/ha, for medium scale beef and cattle $413, and for tree plantations $2,550. Nepstad et al. (2009) estimate that 90 percent of the Brazilian Amazon would have carbon costs less than $2.7/metric ton of CO_2. They estimate the forgone profits from soy and cattle ranching to be $275 billion and $5.8/metric ton of carbon.

According to Nepstad et al. (2009), $7 to $18 billion could be the extent of additional funding (beyond Brazil's existing budget) required to stop forest clearing in the Brazilian Amazon. Such expenditures would outweigh the opportunity costs to society. They would go toward providing incentives and compensation for indigenous, forest-dependent, and small-scale agriculture communities to defend their territories, maintain forest areas, and participate in non-destructive activities; reward law-abiding cattle and soy farmers; and improve law enforcement of land use rights and protected area management.

Grieg-Gann (2008) estimates the highest returns from tree plantations, at $2,550/ha. Nepstad et al. (2009) believe that ending deforestation in Brazil could generate revenues from the carbon market ranging from $37 billion to $111 billion between 2013 and 2020. They also explain that the returns on investment will include intangibles from the reduction of forest fire, air pollution, flooding, biodiversity loss, soil erosion and potential rainfall inhibition. They estimate some co-benefits of a REDD program include the doubling of income of 200,000 rural forest-based families through direct REDD payments or alternative investments in livelihood strategies and a $10-$80 million/year reduction in fire-based costs to society due to respiratory illness, deaths, agricultural and forestry damages.

Brazil has the second highest percentage (17.4) of global profit potential for carbon investments in the world, after the Democratic Republic of Congo (24.7%). This means that it has both the economic and biological conditions that make it a good place for investing in forest carbon. Additionally, Brazil has a relatively low risk factor (0.54 on a scale where 0 is the most risky and 1 the least risky). This combination of high profit potential and relatively low risk associated with forest carbon investments results in Brazil having an FCI score of 100, the highest in the world, and thus making it a very attractive site for forest carbon projects. The Brazilian Amazon in particular is uniquely poised to have a significant role in carbon sequestration markets. In addition to Brazil being the second largest forested country in the world, it is also producing some of the highest levels of carbon emissions through deforestation and forest degradation.

2.6 OPPORTUNITIES FOR TENURE INVESTMENTS

Although the Amazon forests are vast and remote, there is general political will within Brazil to enforce sustainable land use policies. Brazil has substantial institutional capacity, civil society organizations, and legal frameworks. USAID investments in support of Brazil's forest policy and management reforms have played an important role in bringing about these improvements over the past two decades. However, our case study reveals the presence of important gaps that reduce the country's capacity to address its forest conservation objectives while providing economic opportunities for a broad range of rural inhabitants. Major gaps are listed below.

- Conflict and confusion over titles continues plague some areas of Brazil, such as forests in the state of Pará in the northern Amazon region. Additionally, concessionaires and communal settlements often encounter long delays in titling processes (Hajjar et al. 2012)

- Despite legal reforms that have simplified forest management plan requirements for small-scale forest product harvesting operations, the planning process remains too complicated, costly, and time-consuming for many forest communities (Cronkleton et al., 2011).

- There is a chronic lack of capacity on the part of the federal and state forestry departments to enforce forest laws and provide technical services, such as guidance on and approval of forest management plans and forest product market data (Hajjar et al., 2012; Cronkleton et al., 2011)

The following investments in tenure can help address these gaps and contribute to the achievement of successful ecological and livelihood outcomes in Brazil's forest sector.

- Support to assist with development of expedited land titling or preliminary registration processes, drawing upon best practices for rapid titling and registration of lands.

- Support for pilot projects aimed at developing management plan processes that draw more heavily upon local ecological knowledge and that are better tailored to local community capacity levels, but which can also provide safeguards to minimize deforestation activities.

- Support for expanding the capacity of municipal and community organizations to take a stronger role in forest law enforcement and provision of services that will enable forest inhabitants to capture more benefits from their forests while maintaining the required levels of forest cover.

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3.0 GUATEMALA

3.1 FOREST ATTRIBUTES

3.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Guatemala has the largest forest area in Central America at approximately 3.7 million hectares. Guatemala has essentially two forested regions. The first, and largest, is the Maya Biosphere Reserve (MBR) in the Petén. The reserve covers 2.1 million ha and borders the Mayan forests of Belize and Mexico, making the largest expanse of contiguous tropical forest north of the Amazon. Land uses in the MBR include timber and nontimber forest product extraction; small-scale subsistence activities; and conservation and ecotourism based on the high biodiversity and expansive Mayan archaeology. The Guatemalan highlands cover 2.4 million hectares, but are only 30 percent forested. In addition to providing basic subsistence materials, these highland forests serve an essential function at maintaining water resources.

1.6 million ha of Guatemalan forests are primary, with another 1.8 million ha ranked as secondary natural regrowth. Only an estimated 173,000 ha are planted forest. In the MBR, the primary forest is middle and high broadleaf tropical forest with some inundated savannas, pine forest and remnant mangroves. Commercial timber extraction in the Maya Biosphere Reserve is focused on a few high-value species, including caoba (*Swietenia macrophylla*) and *Cedrela* species. It is also home to several valuable nontimber forest products, such as xate palm (*Chamaedorea spp.*), allspice (*Pimenta dioica*), and chicle gum (*Manikara zapota*). The primary forests in the highlands are coniferous mixed forests and agroforested areas, where *Pinus spp.* are the most important commercial timber species. Four conifer species (*P. caribea, P. maximinoi, P. oocarpa, and C. lusitanica*) and two broadleaved species (*Tectona grandis* – teak, and *Gmelina arborea*) comprise 70 percent of Guatemalan plantations and *Hevea brasiliensis* is planted for both rubber and timber.

Guatemala has high rates of deforestation, with a 1.47 percent change between 2005 and 2010. The deforestation rate varies within the country, with the Petén experiencing higher rates than the highlands to the south (Renner et al., 2006). Within the MBR, the average annual rate of forest cover disappearance is estimated at 1.18%, with most of the deforestation taking place in the buffer zone located along the reserve's southern boundary (Radchowsky et al., 2011). The primary threats to MBR forests are fires and encroachment of small landholders from the Mexico border, southern Petén and other parts of Guatemala. These threats are affecting national parksthat surround the international border more than the community concessions which are located within the interior multiple use zone. Although the MBR has historically been quite removed from roads and populated areas, current plans to expand transportation networks for tourism and energy exploration could threaten this remoteness. The highlands are experiencing an annual deforestation rate of 0.64 percent and the primary threats to forests include firewood and timber collection, forest fires, overgrazing, and pests on pine trees.

3.1.2 CARBON STORAGE CHARACTERISTICS

It is estimated that Guatemala may have carbon stocks of between 787 million and 1.1 billion metric tons (Gibbs, 2007) (281 million according to FAO, 2010). Guatemala has a Forest Carbon Index score of 85, which compares favorably to the global average of 77 in terms of making it an attractive location for forest carbon investments. However, it has a higher risk factor (0.39 on a scale where 0 is most risky and 1 is least risky) than other Central American countries, such as Mexico (.61), Honduras (.42), Nicaragua (.46), and Panama (0.63).

3.1.3 REDD+ PLANNING AND ACTIVITIES

Guatemala submitted its Readiness Plan Idea Note (R-PIN) in 2008 and has a signed Participation Agreement with the Forest Carbon Partnership Fund. It is also a partner (observer) of the UN-REDD Programme. A variety of REDD projects are being implemented in Guatemala, including the Program for Environmental Services through Carbon Sequestration located in the Sierra de las Minas Biosphere Reserve Project in central/northen Guatemala, an avoided deforestation project in the Sierra del Lacandón National Park located within the boundaries of the MBR, and the GuateCarbon Initiative led by the Rainforest Alliance and focused on the multiple use zone of the MBR (Cenamo et al., 2009, Hogdon et al., 2012).

3.2 POLICY ATTRIBUTES

3.2.1 POLICY CONTEXT

Guatemala's government has historically relied on municipal governments for the management of natural resources, although overarching policies are developed at the federal level. The 1985 Constitution of Guatemala recognizes communal tenure. The 1996 Peace Accords signed at the closing of the armed internal conflict required devolution of land rights to communities. These two policies were prompted by attention to traditional land uses, but have been largely stagnant. A 2005 law (Ley de Registro e Información Catastral) ratified these ideas to recognize indigenous and non-indigenous communal lands, although it does not recognize communal rights to forests. Two government programs, PINFOR and Programa Bosques Comunales y Municipales, played the most important role in promoting communal forest management rights. The Maya Biosphere Reserve has its own management plan that incorporates use rights and rules for communal forest concessions. This was developed primarily out of conservation interests, with significant international financial support, and is currently a strong, fully implemented policy. With the establishment of the MBR in 1990, the national government devolved management authority to the National Council for Protected Areas (CONAP). CONAP is responsible for developing the overall MBR management plan, including the regulations for community concessions. Outside the MBR, the National Institute of Forests is the authority over forest resources, although municipalities can be owners of forest areas where communities reside, and are allowed to develop their own management rules in these areas.

3.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Guatemala has slightly negative performance on all six World Governance Indicators (Table 3.1), with the worst being Rule of Law. Guatemalan governance has improved in the case of Voice and Accountability, Political Stability, and Regulatory Quality since 2002, but degraded in Government Effectiveness, Rule of Law, and Control of Corruption during the same time period. Growing problems with enforcing forest protection regulations in the MBR demonstrate the primary governance threats to a National REDD strategy.

TABLE 3.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

(-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	-0.33	-0.42	+
Political Stability	-0.73	-0.87	+
Government Effectiveness	-0.69	-0.50	-
Regulatory Quality	-0.07	-0.13	+
Rule of Law	-1.12	-0.94	-
Control of Corruption	-0.60	-0.55	-
Corruption Perceptions Index = 3.2 (Rank = 91 of 178) (Transparency International 2010)			

Specifically referring to forest governance, Guatemala has a poor history of including local communities and indigenous members in decision-making and forest rights are still unclear to many. As a result, there have

been difficulties enforcing forest and protected area laws, to the extent that there have been several actions by locals directly against government and NGO agencies responsible for developing and enforcing forest policies. Guatemala's R-PIN notes that law enforcement is inadequate due to scarce funding allocated to forestry-related institutions. The external evaluation of the R-PIN recognizes that Guatemala has few detailed suggestions for how REDD+ funding could improve forest governance. With FAO as a catalyst, however, indigenous and community forest organizations from throughout Guatemala met in 2009 to discuss a national alliance for marginalized groups to have a voice at national and international levels.

3.3 TENURE ATTRIBUTES

3.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

In the MBR, communities receive 25 year concessions that include management and exclusion rights (see Box 3.1 for additional details on these concessions). However, since most of the communities are physically located outside of their concessions, it can be difficult for them to implement effective exclusion mechanisms. Additionally, the forest resources belong to the state and communities must commit to following state or municipal-based Forest Management guidelines for both commercial and non-commercial use. In the case of the MBR, this requires being certified by the Forest Stewardship Council. In the Guatemalan highlands, municipalities are generally the legal owners of land, although tenure devolution experiences are diverse. Several communities, but not all, have obtained management and exclusion rights in this area. Although the public registry maintains rights as indivisible, some highland communities have allowed individuals to purchase rights within a community or municipal title.

3.3.2 TENURE SECURITY

In the MBR, communities generally expect that they will continually renew their 25-year concessions as long as FSC certification is maintained. Recent changes in the states interests that include promoting archeological sites and energy exploration, however, have generated some doubt on the security of their full rights. In the highlands, rights are less secure, and communities are concerned about current interests in creating protected areas and developing capital projects within their land. There are also overlapping and conflicting rights among communities and between communities and municipalities

3.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Community concessions in the MBR and some communities in the highlands have exclusion rights, though this is sometimes difficult to put into practice. Some communities feel threatened by encroachment and are unable to defend their territories without assistance.

While the government agency in charge of protecting forests within the MBR has provided some support to communities, it has not always been helpful in assisting communities' enforcement of rights. Municipalities and the police have provided some help with exclusion and rule enforcement in the highlands. Most communities in both regions consist of internal institutions to help defend territories and resources, although their success is varied.

Box 3.1: Community concessions in the Maya Biosphere Reserve

The Maya Biosphere Reserve (MBR) has been widely cited as a success story for devolving forest use rights to communities in areas where government has little capacity to enforce protected area boundaries. The MBR is located in northern Guatemala, in the department of El Petén. The reserve has 2.1 million hectares of lowland tropical rainforest, and, together with the Mayan forests of Mexico and Guatemala, makes up the largest contiguous tropical forest north of the Amazon. The MBR is divided into three primary land use types: Core areas which house four National Parks and three wildlife reserves, a Multiple Use Zone, and a Buffer Zone. The ecosystems in these areas include lowland forests, inundated savannas, lakes and lagoons, rivers and wetlands, and some pine forests. In addition to a diverse ecology, the MBR has several large Mayan archaeological sites that form part of the core areas. The Petén is home to about 500,000 people, most of whom live south of the Maya Biosphere Reserve, although road expansions and a recent increase in exiles returning to Guatemala from Mexico are partly responsible for growing populations within the reserve. Those who live in and near the reserve participate in small-scale agriculture (mostly corn, beans, and vegetables), timber harvesting, and nontimber forest product collection (xate palm, allspice, and chicle gum).

The Maya Biosphere Reserve was established in 1990. Prior to its creation, a military-led government institution called FYDEP (National Company for the Promotion and Development of the Petén) was tasked with promoting infrastructure and colonization of the Petén from 1964-1988. The institution built roads; sold private land parcels with preferences for cattle, timber and mining; allocated a few collective titles to landless peasants; and issued harvesting concessions to timber companies. In 1988, FYDEP was eliminated and two years later the MBR was created based on conservation principles with significant lobbying by environmental NGOs and support from USAID. By the mid-1990s, several events sparked a commitment to community forest concessions, including the signing of Peace Accords which required the government to make more land available to rural communities and funding of a USAID-sponsored project with Tropical Agricultural Research and Higher Education Center (CATIE) based in Costa Rica. Thus the concession system within the Multiple Use Zone was fully developed. Of the 18 concessions that have been created to date, 12 are community concessions, 4 are cooperatives or municipal groups, and 2 are industrial concessions. The community concessions and cooperatives are generally managed by groups of residents living in the Buffer Zone. In a few cases, primarily indigenous communities reside within their community concession. Timber management activities within the concessions must have Forest Stewardship Council (FSC) certification. Provided that they maintain the FSC certification, communities will be able to request renewal of their use rights after the end of the 25-year concession agreement.

The community concessions of the Maya Biosphere Reserve have been widely praised for their ability to distribute rights to communities, retain forest cover, and provide a livable income. This success was largely due to massive international support from donor agencies, NGOs, and consultants. Between1992 and 2004, USAID contributed approximately $40 million to the effort, with a similar amount by other international aid agencies, $15 million from the Guatemalan government, and $10 million from international NGOs. Environmental lobbying, the signing of the Peace Accords, and international support were also crucial component of success. In addition, the general remoteness of the region has served to discourage extensive migration,.questions have been raised about the likelihood of long-term success for The The high cost of maintaining forest certification and the difficulties of accessing international niche markets present substantial challenges to the MBR concession program's long-term success, as does the lack of local technical expertise for managing community enterprises. When USAID reduced funding in the early 2000s, many of the support organizations left the region as well. However, the USAID regional mission continued support for the Rainforest Alliance, which has continued to work on expanding market access and developing new products for international markets. Newly constructed roads and the in-migration that typically accompanies transportation infrastructure expansions pose another threat to the success of the MBR concessions over the long term. Finally, there is growing state interest in energy exploration and tourism development, the latter of which recently resulted in an attempt to reclassify land from community concessions within the Multiple Use Zone to a protected area for archaeological ruins. The continued functioning of the MBR's community concession system will require continued financial enefits that support communal capacity building, higher returns from certified forest management, and better control of encroachment and illegal settlements within national parks and concessions.

3.4 USER GROUP ATTRIBUTES

3.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

User groups in Guatemala rely on forests for subsistence and income generation. In the highlands, about 300,000 ha of forest are under communal tenure and over 80 percent of residents rely upon forests for firewood, animal fodder, household wood consumption, local artisanry and manufacturing materials. Forests are also a critical component of the indigenous cosmology and protection of water sources. In the MBR, 500,000 ha are in communal concessions, although small-scale farming is only allowed on communal settlements outside the MBR. Forest areas outside the MBR and within communities inside the MBR are sometimes cleared to farm corn, beans, squash, and vegetables for subsistence. Agroforestry is also common within the MBR buffer zone. Concessionaires rely on the timber and nontimber resources of the forested community concessions for up to 50 percent of their income.

3.4.2 POWER RELATIONS

Local communities have long had limited power in Guatemala, with the centralized government maintaining land control, historically giving preference to logging and mining companies, and devolving management rights only so far as municipalities. Recently, this has begun to change, though the national government (MBR) and municipalities (highlands) retain decision-making power of forest resources due to their ownership of land title. Although communities had little voice in the initial stages of MBR development, they have slowly gained power as concessionaires organized into associations and cooperatives. Conservation organizations and the national government still retain the majority of power, although aggressive tactics including setting fire to government buildings have demonstrated local residents' and illegal immigrants' disapproval of government and NGO control. In the highlands, communities have also organized and achieved several land-rights successes as a result, but are still overpowered by the interests of municipal governments, conservation groups, and capital projects in the mining and hydroelectric sectors.

3.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

The Maya Biosphere Reserve was established based on a concept of conservation developed largely by international interests backed up with appropriate funding. Additionally, much international interest is generated due to the expansive Mayan ruins found throughout the area that provide both historical significance and tourist destinations. The significant indigenous populations of highland communities receive attention from groups interested in supporting traditional rights. Conservation groups are also comitted to retaining forests in this area for carbon and watershed protection.

3.5 ECONOMIC ATTRIBUTES

Although few formal studies exist that explore the opportunity cost of keeping land in forest in Guatemala, the costs are likely average. Deveny et al. (2009) show Guatemala as having a range of opportunity costs from $500-$2,000 per ha. They also consider the Maya Biosphere Reserve as one of few places of low opportunity costs for forest carbon. The FCI estimates that opportunity costs would be less than $5 per metric ton in the MBR. Much deforestation in the MBR does not result in significant revenue generation, rather it is the often the result of illegal migration and fires. The revenue generated by tourism, international support for the biosphere reserve, and certified timber have provided some incentives to maintain forest cover outside these threatened areas. In the highlands, the ecological services that forests provide are also a high incentive over alternative land practices of illegal logging, grazing, and household use of forest products.

The forest-based land uses most likely to generate economic returns in the MBR are archaeological and ecotourism, certified timber and nontimber forestry, and conservation payments for protected areas. In the highlands, payments for ecological services for watershed protection, fire prevention, and maintaining communal protected areas are likely the highest returns on investment.

3.6 OPPORTUNITIES FOR TENURE INVESTMENT

Guatemala was included in this analysis because of its unique emphasis on developing community concessions that respond simultaneously to global conservation interests and demands for traditional land rights. The success of this experiment over other land management alternatives (i.e., state-managed protected areas) suggests that community concessions may be a worthwhile investment for governance devolution activities in areas where communities can receive ample support over a long initial incubation period from international and local NGOs, international donors, and national governments. However, for the experiment to succeed in the long run, interventions are needed that focus on strengthening local capacity to undertake technical forest management and generate the financial resources needed for enforcing forest management rules. In Guatemala, developing and implementing strategies aimed at minimizing forest clearing by both immigrants and long-term residents is likely to be a critical step in this process.

Promising investments for supporting Guatemala's efforts to devolve and strengthen forest rights include:

- Financial support for improved governance for CONAP, the National Protected Areas Council responsible for managing the MBR. With greater financial support CONAP could strengthen its capacity to provide assistance in limiting forest clearing in communal concessions and protected areas.
- Support for developing local producer association capacity to engage effectively in marketing timber and nontimber forest products harvested from forest concessions.
- Identification of communities in the highlands which do not have title, and provision of support for municipal and national government to establish a land titling program and/or system of ecosystem services concessions modeled after those in the MBR.
- Support for multi-stakeholder processes in both the highlands and lowlands that emphasize transparency and inclusion in deciding the best allocation of REDD+ funding for protecting forests in areas occupied by communities.

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4.0 MEXICO

4.1 FOREST ATTRIBUTES

4.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Mexico ranks twelfth in the world for the amount of forest, with 65 million ha forest and 20 million ha of other wooded land (FAO, 2010). These forests are found primarily in the northern states along the cordilleras and on the Yucatan Peninsula.

Mexico has 34 million hectares of primary forest, 27 million ha of naturally regenerated forest, and 3 million ha of planted forests (FAO 2010). Of this, over half (32.9 million hectares) are temperate forests and another 30.7 million hectares are tropical dry or rainforests. The temperate forests are dominated by pine-oak communities found on the slopes of the Sierra Madre Occidental and the Sierra Madre Oriental in western and eastern Mexico, the volcanic axis joining these two ranges, and the Sierra Madre del Sur along the Pacific coast. These forests have the most pine species of any country in the world and around 130 species of oak – many of which are endemic. The conifer-oak forests contain the highest value timber of all Mexican forests. The tropical rainforests and tropical seasonal forests are found in Chiapas, northern Veracruz, and most of the central and southern Yucatán Peninsula. Tropical seasonal forests withstand long dry seasons, resulting in canopies sometimes less than 10 m in height with a loss of up to 50 percent of their leaves. Tropical montane forests are found from 1,000 to 1,500 meters on the western slopes of the Sierra Madre Oriental, Sierra Madre del Sur, and north and Central Chiapas. Few commercial timber species are found in these forests, although they are home to several nontimber forest products. Mexico also has 770,000ha of mangroves.

Mexico's deforestation rate between 2005 and 2010 was 0.24 percent, decreasing from 0.52 percent from 1990-2000. The majority of recent deforestation has occurred in the tropical rainforests, driven by agricultural and livestock expansion linked to colonization and the generation of cash crops. Some deforestation has been due to selective logging for high value timber species such as mahogany. Other causes of deforestation throughout the country include illegal logging, forest fires, and pressure for urban expansion and mass tourism. In the southern Yucatán, though, some infrastructure has been built for ecotourism with the end goal of curbing deforestation. Some also claim that deforestation within ejidos is partially motivated by the fact that ejidos cannot sell their forest land, but can sell agricultural plots (Barsimantov and Navia-Antezana 2012; Barsimantov et al. 2011). Thus, if forest land is converted to agriculture or pasture, residents can sell their property and relocate.

4.1.2 CARBON STORAGE CHARACTERISTICS

It is estimated that Mexico has between 4.4 and 5.9 billion metric tons of carbon (Gibbs, 2007) (2 billion metric tons according to FAO*).* Although Mexico does not rank in the top 10 countries for carbon profit potential, it has a moderately high FCI score (85) due to the low risk of investment (0.61 on a scale where 0 is the highest risk and 1 is the lowest).

4.1.3 REDD+ PLANNING AND ACTIVITIES

Mexico has a signed participation agreement with the Forest Carbon Partnership Facility, has submitted a Readiness Preparation Proposal (R-PP) and has been selected as a Forest Investment Program (FIP) pilot country. Mexico is a partner to the UN-REDD Programme. It already has established reference scenarios and is establishing a nation-wide Land Use Land Cover Change (LULCC) monitoring system.

4.2 POLICY ATTRIBUTES

4.2.1 POLICY CONTEXT

The national government has developed a strong regulatory framework for forest resource management, including the Mexican forestry law and the Mexican environmental agency. Modifications to these rules can occur through federal government programs and second-level community organizations. Since communities are owners of their land, they hold significant autonomy in land use decisions. Second-level community organizations, however, play an important role in linking communities to external opportunities.

More than half of Mexican land is in common property, either within ejidos or indigenous communidades. Another 25-33 percent is privately owned, with very little land belonging to the government. Communal land tenure schemes were developed after the Mexican revolution as part of the Constitution of 1917 and remained largely unchanged until 1992. Their development was motivated by peasant demands for land rights. Under the original ejido design, the state had a significant amount of control over ejido land use decisions. Reforms in 1992 to Article 27 of Mexico's constitution created expansive changes to the ejido system, allowing them greater autonomy in decision making, establishing new regulations for governing property within ejidos, and developing a new process for addressing concerns. Forest management policies have evolved from a conservation ethic in the 1930s, to a focus on short-term concessions with timber companies from the 1940s to 1970s, to state owned companies form 1970s to early 80s. Since the 1980s, communities have regained control of forest land from concessions given out by the government after valuable species became difficult to come by for state enterprises. The state has since developed several programs to support sustainable forest use within ejidos and communidades, motivated more by environmental concerns than state control. Mexico's uniqueness in tenure and forest policy reform is that it has made *de facto* communal land use *de jure* by learning from existing structures rather than suppressing them.

4.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Mexico's Worldwide Governance Indicators range from slightly positive to slightly negative (Table 4.1), with the highest being Regulatory Quality and the lowest Political Stability. All indicators have decreased since 2002.

TABLE 4.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

(-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	+0.13	+0.28	-
Political Stability	-0.68	+0.04	-
Government Effectiveness	+0.17	+0.30	-
Regulatory Quality	+0.35	+0.53	-
Rule of Law	-0.57	-0.26	-
Control of Corruption	-0.27	-0.12	-
Corruption Perceptions Index = 3.1 (Rank = 98 of 178) (Transparency International 2010)			

While Mexico has gone through several phases of supporting community empowerment through land devolution and laws supporting community forestry, it has also gone through periods of not trusting communities to manage forest resources. The vast majority of the time, however, land devolution and forest management policies have been the result of communal demands for rights and inclusion of peasant and indigenous communities in resource management. Since the mid-1990s, the Mexican government has implemented several programs that strongly support community forestry. Currently, communal land claims have national recognition and community members are generally organized and skilled to determine how to manage forests and distribute benefits. Local governance is particularly democratic, representative, and autonomous when compared to other countries.

In reference to REDD, Mexico has created a platform where most stakeholder groups, including NGOs, ejidos and communities, private sector and academia, have gathered to discuss the future of REDD-based policy in Mexico.

4.3 TENURE ATTRIBUTES

4.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

Communal tenure in Mexico is recognized through *comunidades* (indigenous communities with ancestral occupation of the land) and *ejidos* (groups of individuals who have inherited land that previously belonged to haciendas). Both communities and ejidos have use, management and exclusion rights to their communal forests. Changes in Article 27 of Mexico's constitution in 1992 made it possible for agricultural lands and housing lots within an *ejido* to be divided and sold with a 2/3 majority vote. However, ejidal forest land is required to remain under communal tenure. Although formal parcelization has been relatively rare, de facto individualization and forest conversion to agricultural plots has taken place in communities that do not have active forest management programs (Barsimantov et al., 2011). In the comunidades, all land must remain under communal tenure. Although forest ejidos and communidades rely on forest technicians to develop management plans and are subject to strict forest management laws developed by the federal government, they have substantial freedom to choose if and how they will use their communal forests. While communidades and ejidos own rights to their trees, they must have approved forest management plans to commercially harvest timber.

4.3.2 TENURE SECURITY

Ejido and communidade land rights have existed for about 70 years and are considered to be secure property rights.

4.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Ejidos and communidades have exclusion rights, although in some regions boundary conflicts make enforcing their rights difficult.

Ejidos and communidades are internally organized and often belong to formal civil society small farmer associations. They receive support from these higher level associations and from government organizations to build internal capacity and develop land use management plans. These organizations can provide the capacity to defend territories when necessary.

4.4 USER GROUP ATTRIBUTES

4.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

There is significant variety in how user groups depend on forest resources for their livelihoods. While many rural communities rely more on agriculture and cattle ranching for income, some ejidos (a specific type of communal land tenure, often mixed heritage) and communidades (often indigenous) have become particularly skilled at marketing their common forest resources within regional and international markets. Some are largely dependent on commercial harvesting of timber and nontimber forest products, others rely on an intact forest for ecotourism, others focus on local artisanry, and still others live a primarily forest-based subsistence lifestyle. In the southern Yucatan Peninsula, natural gum (*Manilkara zapota*) extraction has become an important activity for over 2000 individuals and pole wood has become an important resource for construction. Other products include copal resin (*Bursera simaruba*), the leaves and seeds of xate palms (*Chamaedorea seifrizii*), and other nontimber forest products. Members of ejidos and communidades are of both indigenous and mixed race and vary widely in their skills, education, and access to resources for forest

management. Private timber companies also rely on forests for commercial harvesting, either on private lands, through stumpage sales on public or community forests, or purchasing lumber for secondary processing.

4.4.2 POWER RELATIONS

Mexican communidades and ejidos currently exercise a significant amount of power in land use decisions. The NGOs that have worked in Mexican forests have generally been successful at empowering communities rather than promoting their own agendas. Second-tier associations of communities are a crucial component to the power of ejidos and communities. In the past, private and state logging companies had significantly more power than communities, but this has been reversed with current Mexican land reform and forestry laws. At the same time, indigenous communities are still the least powerful, often lacking access to information and resources and forest management and the distribution of benefits. External agents sometimes take advantage of their forest resources as a result. Power differentiation within communidades and ejidos, however, is the greatest concern. Communal leaders are sometimes known to exclude other members from decision-making and force certain types of land use to their own benefit. This is partially due to regulations within ejidal law that the number of eijtarios (or shareholders) remains constant, thus the percentage of residents with voting and revenue sharing rights continually decreases as the population grows. Thus, newcomers to ejidos have significantly less power than their predecessors. All future residents of indigenous communities, on the other hand, have voting and revenue sharing rights, thus the number of shareholders increases over time, maintaining a theoretically more equitable internal distribution of power.

4.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

Broader social support for Mexican forest conservation stems from interest in biodiversity conservation of tropical forests, preservation of Mayan archaeological sites found in forests along the Yucatán peninsula, and interest in ecotourism. Mexico is also quite renowned for its community forestry experience, particularly with certified timber.

4.5 ECONOMIC ATTRIBUTES

The Forest Carbon Index (FCI) shows Mexico as having high opportunity costs for retaining land in forests, at over $2,000 per hectare (Deveny et al. 2009). The Yucatán peninsula and cordilleras are considered among the few areas with low forest carbon costs, with a range of $5 to $20 per ha. Mexico's hydrologic PES projects pay forest owners between $27-$36/ha/year as an incentive to retain land in forest cover in watersheds designated as overexploited or serving large populations. Under certain soil and water conditions, alternative land uses could generate higher average returns per hectare than these payments. Corn, for example, is estimated to bring US$ 37/ha/yr and livestock production US$66/ha/yr in some circumstances (Jaramillo, 2002). Conditions for farming and ranching are not always viable over the long term, however, so the government's current payment levels could be appropriate to reduce deforestation and degradation in many areas.

Mexico has substantial experience with forest preservation, payment for ecosystem services (PES) programs for watershed and biodiversity protection. Since 2003, the PES program for hydrological services has been in place, in which direct payments are made to individuals and communities to conserve forests. Since 2004, there have also been PES programs for biodiversity, carbon sequestration, and agroforestry. These programs currently cost the federal government $100 million annually and as of 2008 benefitted over 1100 beneficiaries. Although some studies have found a small but significant overall reduction in deforestation in participant forests, it is generally agreed that Mexico's federally-sponsored PES have come short of their goals. Several reasons have hindered their success, including the substantial allocation of payments to communities whose forests were not in danger of deforestation, the short funding periods, leakage of deforestation to neighboring forests, and payments that were generally not high enough to induce a behavior change.

Additionally, Mexico has gained experience with carbon market projects through the Clean Development Mechanism and other voluntary markets. Most recently, the Sierra Gorda World Heritage Site's carbon project received validation under two emerging global carbon market standards: the Verified Carbon Standard (VCS) and the Climate, Community and Biodiversity (CCB) Standard. With a primary focus on reforestation projects, its success has been attributed to the small-scale reforestation projects that benefit poor farmers and robust carbon accounting.

Lessons learned from these experiences suggest that REDD+ sponsored programs most likely to provide a return on investment include payments for ecosystem services; capacity building for communities to improve forest governance, forest management skills, and marketing of products extracted sustainably; and support for low-impact ecotourism infrastructure.

4.6 OPPORTUNITIES FOR TENURE INVESTMENTS

With 70% of its forest land owned by ejidos or commuidades indigenas, Mexico's trajectory toward forest governance devolution is well in advance of most countries in Latin America, Asia, and Africa. However, the following important gaps still exist in the tenure system, impeding e the achievement of forest conservation objectives, the provision of viable livelihood benefits, or both in many parts of Mexico.

- Although a significant portion of Mexico's forests is certified by the Forest Stewardship Council, the certified forests are disproportionately located on ejidal lands; relatively few certified forests are located on communidadal lands (Vhugen et al. 2012).
- Enforcement of rules against agricultural clearings on forested land is often challenging, both with respect to outsiders encroaching on community-held land and community members.
- Required forest management plans are time-consuming and costly to prepare, putting them out of reach of many ejidos and communidades. Additonally the requirements are based on western scientific understandings of how tropical forests function and how they ought to be managed. As a result, they may not mesh with traditional values or ecological knowledge.

Tenure investments that have potential to address these gaps include the following:

- Support for a program that provides communidades with the technical and financial assistance, as well as training to enable them to obtain Forest Stewardship Council certification for timber and nontimber forest products.
- A complementary component of the certification program would be a program for providing communidade members with the skills needed to run a small or medium sized forest product enterprise. Such assistance has good potential for expanding the capacity of forest residents to obtain a larger share of benefits from the forests in which they live. Aside from the livelihood benefits, this could have an ecological benefit by decreasing the need to clear land for agriculture.
- Support for strengthening capacity of communities to carry out enfocement activities.
- Support for forest policy and legislative reforms that would replace the requirement for highly technical forest management plans with a pilot program designed to develop alternative simplified management plans that mesh better with local skill sets and draw on local ecological knowledge and forest practices.

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5.0 PERU

5.1 FOREST ATTRIBUTES

5.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Peru ranks 11th in the world for the size of forest cover. The majority of this forest is found in the Amazon lowlands, an area that has retained much of its forest compared to other Latin American countries. Alternative land uses such as mining, hydrocarbon exploration, small-scale agriculture, and biofuel plantations, such as oil palms, are increasing in this area, although several indigenous groups that rely on sustained forest resources for their livelihoods reside in the region.

Peru has vastly diverse forests, ranging from broadleaf evergreen forests in the Amazon basin, to coastal desert, to semi-arid forests in the Andean highlands. 60 million ha of all forests are primary, 7 million ha are naturally regenerated, and 993,000 ha are planted (FAO, 2010). Broadleaf rainforests cover about 57 million hectares and have both upland and flooplain ecosystems. The alluvial forests in this region are the most promising for forest management and agroforestry, with canopies reaching 40 m in height, although several areas have been intensively degraded leaving primarily secondary growth species. The upland broadleaf forest is home to high value species such as Brazil nut (*Bertholletia excelsa*) in the department of Madre de Dios, tara tannins (*Caesalpinia spinosa*), palm hearts, and cat's claw (*Uncaria tomentosa*) for nontimber products, and some caoba (*Swietenia macrophylla*) and cedar (*Cedrela odorata)* - although it has largely been extracted- and *Guazuma spp,* and *Calycophyllum spruceanum* for internal timber markets. Montane forests occupy the eastern slopes of the Andes and have the highest biological diversity. They are characterized by widely varying gradients in topography, resulting in different levels of precipitation, soil types, aspect, and radiation that provide home to several endemic species. The Andean highlands are home to many plantations of *Eucalyptus globulus*, *Polylepis spp*, and *Alnus acuminata.* Peru also has 5,300 hectares of mangroves.

From 2005-2010, Peru had low deforestation rates at 0.22 percent per year, increased by 0.08 percent since 1990-2000 rates. On the eastern slopes of the Andes, forests have been deforested for illicit coca cultivation. In the Amazon region, the primary threats to deforestation are small-scale subsistence agriculture expansion, illegal crops in the north, and gold mining in the south. Improvements on the Inter-Ocean highway that links Brazil to Peruvian ports have sparked colonization and deforestation for swidden agriculture, cash crops, and eventually cattle ranching in the southwestern Amazon. Exploration for gas and oil, as well as charcoal production, has prompted deforestation in some areas. In Madre de Dios, timber extraction and commercial fruit plantations have led to forest degradation and deforestation. The areas of Ucayali and Loreto are prominent for timber harvesting. In the Andes, forests have been highly degraded but are experiencing a shift toward afforestation both naturally and with the help of government-financed NGOs.

5.1.2 CARBON STORAGE CHARACTERISTICS

It is estimated that Peru holds between 2.8 and 13 billion metric tons of carbon in its forests (Gibbs 2007) (8.6 billion according to FAO). Peru has an FCI score of 95, third behind Brazil and Russia. Peru's share of the global profit potential associated with forest carbon is 3.9%, which is the fifth highest in the world (tied with Bolivia). Its risk factor associated with carbon investments is 0.54 (on a scale where 0 represents the highest risk and 1 represents the least risk). The combination of a high profit potential and moderate risk give Peru its high FCI score, and make it a relatively attractive location for carbon investments.

5.1.3 REDD+ PLANNING AND ACTIVITIES

Peru has signed a Participation agreement, developed a Readiness Preparation Proposal (R-PP), and was selected as a Forest Investment Program pilot country. Peru recently joined the UN-REDD programme, and has official observers on the UN-REDD Programme Policy Board. It has also requested support from the InterAmerican Development Bank as a delivery partner. Peru is engaged in two readiness activities and as of 2011, at least 35 pilot projects covering more than 7 million hectares had been initiated throughout the nation (Espinoza and Feather 2011). In 2010, Peru developed a National Forest Conservation Program for Climate-Change Mitigation and launched the Conserving Community Forests project to provide direct payments to indigenous communities that conserve forests. The Law of Provision and Compensation of Ecosystem Services bill was approved by the Commission of Andean, Amazon and Afro-Peruvian Peoples, Environment and Ecology in 2009, paving the way for Peru to participate in global payments for ecosystem services.

5.2 POLICY ATTRIBUTES

5.2.1 POLICY CONTEXT

The national government develops resource management and conservation laws for public areas and complementary areas on regional, municipal and private land are required to follow the same laws. The federal institution in charge of forest management, INRENA, set up a Fund for Forest Development Promotion that provides financial and technical support to forest concessions. A recent law devolves the forest management authority to regional districts

The primary land reform in Peru occurred in 1969 with the Agrarian Reform changes. Agrarian Reform was experienced differently in the Amazon, the Andes and the Coast. In the Amazon, although individuals did not hold title to land, they were allowed to access significant credit for farming a variety of products including jute in the 1960s to rice, corn and plantain credits in the 1970s and 1980s, all planted in lowlands. Across the county, a 1987 law recognized rights to communal land for peasant and native communities and a 1998 decree recognized possession rights to land by providing security to those holding and legitimately occupying land but lacking formal ownership documents. The period of agrarian reform ended the 1991 with legal changes brought to bear permitting the subdivision of land, and land sale, transfer, rental, mortgage and inheritance. The Land Law of 1993 legalized the parcelization and sale of communal land.

5.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Peru's Worldwide Governance Indicators are slightly negative for most (Table 5.1), with only Regulatory Quality and Voice and Accountability being above 0. All indicators except Regulatory Quality have been on the decline since 2002. While the numbers themselves do not present a serious concern for national REDD policy, their trend would need to be addressed within REDD+ considerations.

TABLE 5.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

(-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	+0.04	+0.15	-
Political Stability	-0.93	-0.72	-
Government Effectiveness	-0.36	-0.32	-
Regulatory Quality	+0.41	+0.14	+
Rule of Law	-0.66	-0.47	-
Control of Corruption	-0.36	-0.21	-
Corruption Perceptions Index = 3.5 (Rank = 78 of 178) (Transparency International 2010)			

Since 2007, after signing the Trade Promotion Agreement with the US, the government of Peru has been rapidly restructuring and decentralizing the administration of forests. At the same time, it has been promoting neoliberal policies of land privatization, often making policy decisions without the inclusion of campesino and indigenous communities.

Although it has attempted to improve enforcement of forest management laws, high-profile incidents have demonstrated its failures in this aspect. Timber concessionaires, for example, have not eliminated the common practice of illegal logging. For instance, in 2008, a local community leader informed the national forest management office (INRENA) of a truck hauling illegal mahogany. INRENA officers detained the truck, but one of the drivers was able to escape with it and the majority of the illegally harvested timber. Shortly thereafter, a third man involved in the illegal logging operation murdered the informant while he was in the local INRENA office (Butler, 2008). That the community leader was shot while in the local INRENA offices is of particular concern to local residents, as it raises doubts about the capacity of local officials to maintain law and order.

Other concerns with forest governance come from indigenous groups that have been meeting regularly to discuss potential impacts of forest policy and REDD+ initiatives on their land rights and culture. In 2008 and 2009, they protested reforms in the forest and land tenure laws that gave greater rights to private corporations than communities. Indigenous communities have decried the lack of engagement in the tenure reform process and have also submitted several complaints against the government for engaging in REDD+ policy making without transparency and participation. Indigenous communities claim that many of the proposed projects will only benefit external actors and are not designed to support and protect indigenous and peasant groups.

In response to some of these concerns, recent reforms have given indigenous people a greater role in developing forest policies, with both the Inter-ethnic Association for Development of the Peruvian Jungle and the National Institute for the Management of Andean, Amazonian, and Afro-Peruvian Settlements providing representatives for indigenous communities. For example, in 2009, Peru launched a complete review of its forest policy through a multi-stakeholder approach that emphasized participatory management and transparency in forest management and conservation.

5.3 TENURE ATTRIBUTES

5.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

The Constitution of Peru declares that all natural resources belong to the state. Most resources are situtated on public land, which individuals can access through time-limited concessions. Concessions exist for timber, nontimber forest products (such as Brazil nut), reforestation, ecotourism, mining, and conservation, among others. Concessionaires have use, management, and exclusion rights, although they must abide by state-defined resource management regulations (see Box 5.1 for an example of how the brazil nut concessions operate in the Madre de Dios department). While communities may have use rights within concessions, they can also hold communal title. Approximately 1200 indigenous communities have title to over 13 million ha of forest land. As of 2002, 72 percent of official peasant communities also had land title, primarily in the coastal and highland regions. In the coastal and highland areas, communities are proprietors of their land and thus have use, management, exclusion, and alienation rights of the land. Communal land in these areas can be privatized and sold with a majority vote. In the lowland forests of the Amazon, communities have priority use, management, and exclusion rights within communal areas. They are also allowed to divide and sell land with a 50 percent majority vote (down from 65 percent since the 1990s). Forested areas in communal titles cannot be alienated, however, and the state retains rights to lease use rights to other groups. The difference between areas that are strictly use and areas that are full-rights for communities is often nebulous. To commercialize timber, communities must submit a forest management plan to the government.

Box 5.1: Brazil Nut Concessions in Madre de Dios

Most studies on deforestation, community forestry, and forest tenure in Peru have taken place in the department of Madre de Dios. Madre de Dios occupies 8 million hectares of southeastern Peru in the Amazon forest. The lowland tropical forest is 90 percent old-growth and the department has several protected areas, including three national parks covering over 3 million hectares, two national reserves, a communal reserve, an indigenous territorial reserve, and a conservation concession. The forests of Madre de Dios are broadleaf evergreen rainforests. High-value timber species such as mahogany (*Swietenia macrophylla*) and cedar (*Cedreka odorata*) can still be found,. The forest is also home to several high-value nontimber forest products, the most important of which is the Brazil nut (*Bertholletia excelsa*). Approximately 110,000 people live in Madre de Dios, including nine different ethnic groups of Amazon Indians. Over 70 percent of the population lives in urban areas. The three primary economic activities in Madre de Dios are resource extraction (timber, gold, and Brazil nut), ecotourism, and farming. About 30 percent of the population depends directly or indirectly on the collection of Brazil nuts. Income from Brazil nuts comprises approximately 65 percent of the annual income for thousands of families.

From the mid 1800s to the early 1900s, immigration to Madre de Dios was driven by individuals looking to tap natural rubber for an expanding global market. With the rise in Asian rubber plantations, the Latin American market crashed and led to a dependence on seringa and Brazil nut extractionIn the 1960s, the Peruvian government developed roads and provided incentives for cattle ranching, logging and mining. By the 1980s, direct settlement programs were initiated and credit for small farmers increased. This time period was when parts of Madre de Dios experienced the highest deforestation rates, primarily as a result of expanding small-scale agriculture and ranching. By the 1990s, however, credit programs were eliminated and agrarian reform was in its final stages. Prior to 2000, timber and nontimber forest product extraction was unregulated.

The Forest Law of 2000 authorized the creation of protected areas and the establishment of long term forest and Brazil nut concessions. Forest management plans are required for both forest and Brazil nut concessions. Madre de Dios includes public land divided into protected areas, concessions and indigenous territories. The remaining lands are untitled. Forest concessions have been granted primarily to larger operations that have the capacity to engage in timber management. Brazil nut concessionaires, on the other hand, tend to be allocated to the poorest families. The Brazil nut concessions of Madre de Dios are particularly interesting, as, unlike the communal concessions in Mexico and Bolivia, Brazil nut concessions allocated to smallholder families include usufruct rights for nontimber resources. In return, the families act as stewards and must comply with a forestry management plan. The average concession is about 1,000 ha and concessions are renewable; many concessionaires have held rights for over a dozen years. By 2010, the Amazon Basin Conservation Association had helped establish over 475 Brazil nut concessions, supporting families in developing forest management plans and providing training in management and business practices. Seventy-two of these families have organized into an organic cooperative to reduce production costs and increase their incomes.

Although Brazil nuts provide a significant income to the rural poor, a variety of factors threaten the sustainability of this activity. First, the market for Brazil nuts fluctuates radically from year to year, making it difficult for families to rely on the product for income. Second, harvesters also engage in several other activities that result in forest degradation and deforestation, notably illicit timber harvesting and slash and burn agriculture. One estimate found that Brazil nut concessions are approximately 50 percent deforested. Escobal and Aldana (2003) found that participation in non-forest degrading activities among concessionaires was more common with individuals who had enough income and education to intensify agricultural use or who lived and worked in the cities. Third, the lack of clear tenure rights for Brazil nut concessions has made it difficult for concession holders to keep out encroachers. And finally, the recent paving of the InterOceanic highway connecting Brazil and Bolivia to Pacific ports in Peru may stimulate future deforestation and degradation. Because Brazil nut collection requires relatively intact forest, however, supporting this activity could be an important component of REDD+ policies in Peru. The clarification of Brazil nut concession titles, combined with government-supported enforcement, reforestation and forest management programs, and increased opportunities to work in urban areas, could reduce pressure on the forest within this tenure type.

5.3.2 TENURE SECURITY

Land rights have been particularly contentious since Peru's signing of a Free Trade Agreement with the U.S., especially in the Amazon. In 2008 and 2009, the president issued several decrees that would have facilitated corporations' (mining, oil and logging) access to titled indigenous lands and allowed concessions to be issued on state-held protected areas and state-held reserves set asode for indigenous peoples. The decrees would have also allowed for government to redistribute idle land to private interests. This threat to indigenous and communal land was further presented as the government vetoed the Conservation Bill for Indigenous People's in 2010. Although the decree has been revoked, the experience has created a sense of insecurity over rights to indigenous and peasant property.

5.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Community groups have exclusion rights as long as they are officially titled. Peru's land titling for communities is incomplete, however, and there is significant confusion as to which areas are titled as communal lands that communities own and forested areas where communities have use rights. Additionally, illegal logging and invasions pose a significant threat and are difficult for communities to confront, particularly when land rights are nebulous.

With the help of regional and international NGOs, indigenous communities have made strides in establishing territorial rights and individual families in the Peruvian Amazon have secured tenure rights to Brazil nut concessions. Both indigenous and communal areas have organized assemblies for decision-making and establishing relations with external actors. The state, however, has been actively pursuing development activities that limit existing communal rights and promote an individual and state's rights framework.

5.4 USER GROUP ATTRIBUTES

5.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

Over 125,000 jobs are estimated to be directly related to forestry activities in the Peruvian Amazon. Forest processing enterprises are located in Lima, Trujillo, Chiclayo, Cuzco, Iquitos, Pucallpa and Tarapoto. It is estimated that in the Madre de Dios region, at least half the population relies on Brazil nut collection for income. In thousands of families, this amounts to more than half their yearly income. Apart from commercial species, the forest has supported the livelihoods of generations of mixed-race and over 1350 indigenous communities who practice subsistence agroextractive activities such as swidden agriculture, fruit extraction, timber extraction for construction, livestock raising, and agroforestry. They also depend on the forest for medicinal plants and meat. In the highlands, communities depend on forests for watershed protection and livestock feed

5.4.2 POWER RELATIONS

Peruvian indigenous and peasant communities face significant threat from an overarching national policy of favoring large-scale commercial interests. While the Peruvian government continually favors private logging, mining, and hydrocarbon companies in the Peruvian Amazon, indigenous and peasant communities continually demonstrate their power of resistance through organized protests against laws that infringe on their land rights. Communities are well organized and receive support from national and international groups. At the same time, large corporations and illegal resource extractors have the financial and political power to present a significant threat to communities.

5.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

Several non-government organizations, including WWF Peru, Conservation International Peru, ProNaturaleza and the Amazon Basin Conservation Association have significant interest in the conservation

of Peru's biologically rich forests. They have participated in policy-forming activities, capacity building for communities and timber companies, and manage ecological research sites. The Peruvian Amazon is also a globally recognized area for independent biological studies and ecotourism. On the other hand, Peru's recent signing of the Free Trade Agreement with the U.S. has generated international commercial interest in natural resource extraction from the area, activities that will generally result in forest conversion.

5.5 ECONOMIC ATTRIBUTES

The Forest Carbon Index shows Peru as having a relatively low opportunity cost for retaining land in forests, from less than $150/ha to about $1,000/ha. In a few locations in the Amazon basin, costs are estimated at less than $1 to less than $5 per metric ton of CO_2. Kirby et al. (2010) estimated the income generated from several alternative land uses in the Madre de Dios area and found that high-grading timber brought in $990/ha, agriculture $339/ha, and cattle ranching $285/ha.

Kirby et al. (2010) found the net present value of ecotourism in Madre de Dios to be $1,158/ha, higher than any other single land use. Brazil nut collection only brought in $80/ha, but could be combined with ecotourism and other benign forest uses such as sustainable timber harvesting to increase their net value. Continued support for Brazil nut organizing, marketing, and product development could provide important economic returns in this region. Throughout the Amazon, conservation payments to conservation concessions could promote indigenous and NGO sustainable forest management and potentially increase the interest in regional biological studies. The ability to certify timber operations and ensure they obtain a higher income than illegal logging could also be an important source of revenue for keeping forest intact. In the Andes payments for ecosystems services (PES) for maintaining soils and water resources would provide a significant return on investment.

5.6 OPPORTUNITIES FOR TENURE INVESTMENTS

Peru has a unique context of having enacted tenure reforms that allocate a full bundle of rights with communal titles. This situation provides a solid foundation for efforts to support sustainable forest management and provide rural Peruvians with access to resources in sufficient quantities to meet their livelihood needs. However, in recent years, tensions between the Peruvian government and rural inhabitants have increased as governmental policies promoting individual property rights and expanding corporate access to natural resources come into conflict with the rights allocated through the new forms of state-sanctioned communal tenure. Many of these policy decisions have been made with limited stakeholder participation and existing rights require clarification. Interventions that might help diminish conflict over resources and provide an enabling environment for sustainable forest management and livelihood improvements are listed below.

- Support for multi-stakeholder roundtables that incorporate peasant and indigenous community representatives for deciding land tenure policy. Roundtables must allow for real input, and not be simply information-providing formats.
- Financing for a national program to delineate and formalize communal land titles and public concession areas, paying particular attention to different rights allocated to different land types, as well as secondary rights.
- Support for capacity building programs to enable indigenous and peasant communities to establish and more actively engage in forest-based industries similar to those that USAID has supported in Mexico and Guatemala.
- Support for the establishment of a national advisory group with power to determine REDD+ finance distribution that incorporates indigenous and peasant leaders. Support for international and local initiatives that monitor and report illegal logging, such as those active in the Congo Basin.

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6.0 DEMOCRATIC REPUBLIC OF CONGO

6.1 FOREST ATTRIBUTES

6.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

The Democratic Republic of the Congo (DRC) has a land area of roughly 233 million km^2, of which an estimated 155 million ha, or 68 percent is covered with forest (FAO, 2010). DRC has nearly 99 million ha of dense humid tropical forests, which is almost half of Africa's rainforests (Eba'Atyi and Bayol ,2009). Lowland humid tropical forests are the most abundant type of forest cover, comprising 83 million ha, or 54 percent of the country's forested area (de Wasseige et al. 2009). Roughly 18 percent (28.6 million ha) of DRC's forests consist of forest-savanna mosaic, while semi-deciduous dry forests comprise another 17 percent (de Wasseige et al., 2009). The DRC also has 8 million ha of swamp forest and 7 million ha of montane or submontane forest (de Wasseige et al. 2009). As of 2010, the amount of area covered by planted forests was quite small at 670,000 ha (Blaser et al., 2011).

Industrial logging is concentrated on just 10 species. Sapelli (*Entandrophragma cylindricum*), wenge (*Millettia laurentii*), and afrormosia (*Pericopsis elata*) are the three species most commonly logged by industry from industrial concessions. The value of timber harvested in the DRC is estimated at $90 million per year. Valued at $1 billion dollars per year, the firewood harvest far surpasses timber in economic importance (Marien 2008). Additionally, numerous nontimber forest products, such as Gnetum (*Gnetum spp.*), African plum (*Dacryodes edulis*), raffia palm products (*Raphia spp.*), and cola nuts (*Cola spp.*), are harvested for subsistence or trade (Hoare, 2007). Bushmeat consumption exceeds a million metric tons per year (Debroux et al., 2007).

Between 1990 and 2010, the annual deforestation rate in DRC was estimated at 0.2 percent per year (FAO, 2010). However, it is much higher in heavily settled areas, such as the Bas-Congo, portions of the Equateur Province, and the Great Lakes region. The primary direct causes of deforestation include clearing for subsistence agriculture, artisanal logging for construction wood and charcoal, and industrial logging (Eba'a Atyi and Bayol, 2009; Marien, 2009; DRC, 2010). An expansion in the road network has opened up areas to mining, logging, and agriculture, all of which are likely to accelerate deforestation and forest degradation (Eba'Atyi and Bayol, 2009). DRC has also experienced recent investment aimed at establishing oil palm plantations, which could potentially result in the conversion of millions of hectares of natural forest to monocrop tree farms (Eba'a Atyi and Bayol, 2009). The country's high population growth rate, and the national government's limited law enforcement capacity linked to entrenched corruption within the forestry sector are likely to hinder efforts to halt or reduce deforestation (DRC, 2010).

6.1.2 CARBON STORAGE CHARACTERISTICS

DRC has 19,639 million metric tons of carbon stored in living biomass, or roughly 127 metric tons per hectare (FAO, 2010). Roughly 77 percent of stored forest carbon is found in the country's humid forest zones. Forest mosaic mixed with cropland accounts for about 13 percent of the country's forest carbon (Nasi et al., 2009).

The Forest Carbon Index for DRC ranges from low-moderate in forest savanna mosaic and dry forests in the south to moderate in the vast area in the center and northern part of the country covered by dense lowland humid tropical forest (Deveny et al., 2009).

6.1.3 REDD+ PLANNING AND ACTIVITIES

DRC's REDD strategy development started in 2008 and has involved Congolese forestry officials, international donors, and local and international NGOs (DRC, 2010). DRC is a participant in both the UN-REDD Programme and the Forest Carbon Facility Partnership. The FCPF approved DRC's R-PP in March 2011, moving it into the implementation phase. In April 2011, ERA Carbon Offsets, Ltd., a Canadian company, signed a Carbon Rights Agreement with the DRC's Minister of Environment for 17.5 millon metric tons in avoided carbon offsets (Climate Connect, 2011). DRC is also participating as a pilot country in the Forest Investment Program.

6.2 POLICY ATTRIBUTES

6.2.1 POLICY CONTEXT

Any efforts to support forest governance devolution in the DRC must take into account the still very fragile nature of state institutions and the many efforts at institutional reform that are taking place concurrently. After more than a decade of civil war, the DRC held free and democratic elections in 2006 for the first time since 1960 (Eba'a Atyi and Bayol, 2009). The nascent movement toward strengthening community rights over forests exists within the context of DRC's 2006 Constitution (DRC, 2006), which establishes a decentralized system of national governance. Under this system, 26 semi-autonomous provinces are to replace the current 11 provinces, and several sublayers of local governments will be formed (Zongwe et al., 2010). However, the new provinces have yet to be created and the existing provinces are struggling to meet their new responsibilities (Klaver, 2009). Responsibility for developing and implementing forest management plans, as well as law enforcement and issuing permits and licenses for the forestry sector have devolved to provincial and subprovincial (sector) levels (Klaver, 2009).

6.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

DRC has a very weak performance with respect to all six World Governance Indicators (Table 6.1). Although it has experienced some gains in several of the indicators, its scores for government effectiveness and control of corruption remain virtually unchanged from 9 years ago when the country began to enjoy some degree of political stability. The country's indicator of political stability remains extremely low, and recent outbreaks of violence in the eastern region are indicative of the DRC's limited capacity to provide a stable environment for carrying out its National REDD Strategy.

TABLE 6.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011B)

Indicator (-2.5 to +2.5)	2009	2002	1996	Direction [2002-2009]
Voice and Accountability	-1.45	-1.69	-1.63	+
Political Stability	-2.13	-2.33	-1.87	+
Government Effectiveness	-1.72	-1.70	-1.54	+ (barely)
Regulatory Quality	-1.62	-1.73	-2.33	+
Rule of Law	-1.70	-1.89	-2.31	+
Control of Corruption	-1.42	-1.43	-2.49	+ (barely)
Corruption perceptions index score = 2 (Rank 101 of 178) (Transparency International 2010)				

An assessment by World Resources Institute (Daviet et al., 2009) exploring how well UN-REDD and FCPF national REDD plans addressed forest governance issues concluded that DRC exhibits very weak capacity in the area of governance and that anti-corruption safeguards and careful attention to indigenous peoples' and human rights would be important elements in the country's National REDD strategy. As a step toward addressing corruption and mismanagement in its forestry sector, in 2010 DRC initiated negotiations to enter

into a Voluntary Partnership Agreements with the EU under the Forest Law Enforcement, Governance, and Trade Action Plan. In addition, the DRC has signed and ratified a number of international treaties and conventions pertaining to forest management and biodiversity conservation, including the Convention on Biological Diversity, the UN Framework Convention on Climate Change, the Kyoto Protocol, and the Convention on International Trade in Endangered Species (FAO, 2010). However, its record in applying those agreements, particularly provisions dealing with indigenous peoples' rights and human rights is poor (Couillard et al., 2009).

6.3 TENURE ATTRIBUTES

6.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

DRC's Bakjika Law of 1967 cancelled individual and community land property rights and vested all land ownership in the hands of the state (Debroux et al., 2007). Law 21/1973 (DRC, 1973), which modified the 1967 law and forms the basis of DRC's current formal land tenure system, retains the notion of the state as sole owner of both the soil and subsoil (Debroux et al. 2007). It includes a provision that the state can grant persons or legal entities standard concessions, which are essentially shorter-term rental contracts, or concessions in perpetuity (Musafiri, 2009). Concessions in perpetuity are transferable, but the state can terminate both types of concessions if the conditions under which they are issued are not met (Musafiri, 2009). A presidential ordinance required under the 1973 law to clarify the status of customary land has yet to be implemented.

The 2002 Forest Code (Law 11/2002) (DRC, 2002) vests all forests and their resources in the state (art. 7). While the Forest Code acknowledges customary use rights to forest products and services, it doesn't transfer rights in the land itself to communities (Debroux et al., 2007). These rights are not exclusive use rights (art. 41), unless the community acquires a forest concession. Customary rights to forests are conceptualized strictly as user rights rather than as rights of ownership and pertain to the meeting of subsistence needs rather than commercial use (Eba'a Atyi and Bayol, 2009). Community rights to farm in forested areas can be revoked by the provincial governors (art. 42). Additionally, customary use rights to forests are considered to be collective rights (DRC, 2010).

Forest lands are divided into three use categories (art. 10): classified forests, protected forests, and permanent production forests. At present these categories exist largely on paper as the DRC has yet to engage in a nation-wide forest zoning effort that would demarcate them on the ground.

Classified forests are areas set aside for protection purposes and are the most restrictive of user and harvesting rights. Management responsibility for classified forests lies with the Ministry for Environment, Nature Conservation and Tourism (MENCT) (Eba'a Atyi and Bayol, 2009).

Protected forests are "economic development" forests, as their purpose is to provide livelihood products and services. These forests are areas in which small-scale agriculture or agroforestry activities can occur (art. 42) or where short-term logging concessions can be issued (art. 43). Within protected forests, both the clearing of trees and subsistence harvest of forest products are allowed. However, persons wishing to clear more than two hectares must obtain a permit from the provincial governor (art. 53). The 2002 Forest Code provides for the possibility of communities to obtain title to protected forests in which they have customary use rights through the acquisition of a community forest concession (art. 20-22 and 41-44).

Permanent production forests are lands that have been identified as suitable for industrial timber production (art. 23). Rights to harvest timber in production forests are allocated through concessions. Concessionaires are required to develop management plans that are subject to state approval (art. 99). They are also required to negotiate social responsibility contracts (art. 89) with the local communities with use rights over the area included in the concession (Debroux et al., 2007).

Communities formalize access and use rights over forests in two ways (Norton Rose Group 2010). They can request that the state allocate forested land to them in the form of **community forest concessions** in areas zoned as protected forests. However, the implementing decrees laying out the procedures for allocating community forests have not yet been passed and no community forests have been established. Their other option is to acquire **long-term concessions** similar to those the state makes available to industrial logging companies in areas zoned as production forests. However, operationalizing the second option will require a mechanism by which communities can acquire legal personalities (FM, 2009a).

The 2002 Forest Code replaced the forest title system for logging operations with an area-based forest concession system (Eba'a Atyi and Bayol, 2009). Article 122 calls for 40 percent of the area fees assessed annually on forest concessions to be distributed to the provinces and territories for use in building community infrastructure (Debroux et al., 2007). However, disagreement currently exists between the national administration and the decentralized administrative entities over what level of government should control the distribution of these fees (Zongwe et al., 2010).

6.3.2 TENURE SECURITY

Under the current legal framework, local communities have weak and relatively insecure *de jure* rights to both land and forests. *De facto* property rights for forests vary depending on which ethnic groups reside in or use the area. It is not uncommon in many areas of the DRC for two or more tenure systems to overlap (Counsell, 2006). Moreover, rights within tenure systems of indigenous groups that still practice hunting and gathering are spatially and temporally dynamic, shifting as base camps are relocated (Counsell, 2006). Members of "indigenous" groups and women are particularly vulnerable to being deprived of access rights to land (and forest resources) in areas where customary tenure systems are operational but land is scarce (Huggins, 2010). In areas where artisanal logging is expanding, customary use rights are often insecure as some traditional chiefs sell logging companies the rights to harvest trees without obtaining the consent of the individuals or families farming or harvesting forest products in the area (Brown and Makana, 2010).

From the standpoint of communities having a voice in forestry decisions, the 2002 Forest code is a clear improvement in that it requires the state to conduct an examination of pre-existing use rights before it allocates new rights on forest lands (Debroux et al., 2007). Moreover, if legitimate use rights exist, the concession conditions must be adjusted to take them into account, and holders of use rights must be compensated for any loss of access (Debroux et al., 2007). In practice, determining who has what use rights to a forested area is a complex and often conflict-ridden process that often fails to reveal the use claims of the politically less powerful indigenous peoples, such as the Bakwa, Batwa, and Bambuti, who may not be physically present at the time that inquiries are carried out (Musafiri, 2009).

6.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Although the Forest Code recognizes local communities' use rights to forests that have not been gazetted as protected areas, it does not state whether those rights are exclusive.

Communities do not have the authority to enforce rules codified in the 2002 Forest Code (or other national legislation). Given that the state has limited capacity as well as lack of political will to enforce these laws, a serious and widespread enforcement vacuum exists. The capacity of communities to enforce de facto rights of exclusion varies greatly over this vast and politically unstable country.

6.4 USER GROUP ATTRIBUTES

6.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

DRC has a population of 66 million (World Bank, 2011a), and is home to more than 200 different ethnolinguistic groups (Lewis 2009). Bantu speakers, including the Bakongo, Luba, and Anamongo are the

most numerous and are found through much of the country (US Department of State, 2011). Nilotic speakers are concentrated in the north and indigenous groups such as the Ba'Aka, BaKa, BaMbuti,Efe, and BaTwa live in the northeastern rainforest (Lewis, 2009). Large numbers of refugees from Rwanda moved into the Great Lakes region in the 1990s (Debroux et al., 2007). In 2011, DRC had an estimated 1.7 million internally displaced persons and 166,000 refugees from other countries (UNHRC, 2011). Population densities vary from greater than 100 inhabitants per km^2 along the eastern border, around Kinshasa, and in the Bas-Congo province to extremely low densities in much of the country's center (Eba'a Atyi and Bayol, 2009).

The DRC's population is evenly divided between rural and urban inhabitants (World Bank, 2011a). In absolute numbers, it has both the largest urban and the largest rural population in central Africa (Eba'a Atyi and Bayol 2009). The per capita gross national income in 2009 was $160 and the majority (71 percent) of the population lives in chronic poverty (World Bank, 2011). Forest products are essential elements in the lives of many Congolese (Debroux et al., 2007; Hoare, 2007). In addition to food, medicinal products, construction materials, and firewood, forests are viewed as important sources of fertile agricultural land (Debroux et al., 2007). A thriving domestic market in forest goods, particularly charcoal, bushmeat, wild edibles, medicinals, and lumber, exists and is fueled by demand from the country's rapidly growing urban areas (Hoare, 2007; Klaver, 2009).

6.4.2 POWER RELATIONS

Government officials have long considered the allocation of forest concessions as a means to acquire personal wealth, and until recently virtually all logging concessions were granted without informing or compensating the holders of customary use rights.

The 2002 Forest Code (Article 99) (DRC, 2002) attempts to address this power imbalance between customary use rights holders and forestry officials by requiring that forestry officials consult with local communities regarding their customary use rights prior to granting concessions. The Code also seeks to address the power imbalance that often exists between communities and industrial logging companies by requiring that concessionaires negotiate social responsibility contracts with local communities. These contracts commit companies to building roads, schools, clinics or other infrastructure in compensation for interfering with customary use rights. Despite the social responsibility contract requirement, many local communities remain at a distinct economic and political disadvantage when dealing with industrial and artisanal logging companies, both of whom hold the power of employment opportunities and often have the backing of state authorities (Counsell, 2006; Klaver, 2009; Brown and Markana, 2010). Recent violent conflicts between an industrial logging company and communities in Bandundu and Equateur Provinces illustrate the complexity of these social relationships as well as the role that unclear rights play in exacerbating tensions (FSC-Watch, 2011; Greenpeace, 2011).

Although dependence on forests and their products is widespread in the DRC, access to forests is particularly important for indigenous groups, such as the Mbuti in eastern DRC, the Twa in Kivu and Equateur Provinces, and the Cwa in the Kasai Lakes area, who derive their livelihoods from hunting and gathering (Debroux et al., 2007). Historically these indigenous peoples have been politically and economically marginalized by their Bantu and Sudanic speaking neighbors, as well as the central government (Debroux et al., 2007). A strong network of local, regional, and international indigenous peoples rights advocacy groups has recently emerged and is working toward ensuring that the customary tenure claims of indigenous peoples are recognized.

6.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

DRC has benefitted in the past eight years from a massive infusion of funding for environmental programs from a large variety of development partners, including the World Bank, the European Union, African Development Bank, Global Environmental Facility, USAID, United Nations Development Programme, and United Nations Environment Programme. The country also has an active network of local and international

NGOs working on issues related to natural resource management and governance (Blaser et al., 2011). In 2009, The World Bank and other development partners started the Forest and Nature Conservation Programme which supports institutional reforms, protected areas management, and the expansion of local community and civil society involvement in forest management (World Bank, 2009). DRC is a member of several regional groups and organizations dedicated to ensuring the sustainable management of Congo Basin forests, including the Central African Forest Commission (COMIFAC) and the Congo Basin Forest Partnership (CBFP). It also receives funding through the USAID-funded initiative, Central African Regional Program for the Environment (CARPE) to support six landscape management projects aimed at reducing deforestation and biodiversity loss (CARPE, 2011).

6.5 ECONOMIC ATTRIBUTES

Grieg-Gran (2008) found that opportunity costs for five likely alternative land use scenarios in the DRC had per hectare opportunity costs ranging from a low of $367 (for annual food crops with a long fallow) to a high of $2360 (for oil palm and rubber plantations). If the value of the timber is included in the opportunity costs, the cost for annual food crops in long fallow rises to $1248/ha and for oil palm or rubber plantations to $3241/ha. Grieg-Gran (2008) found that alternative land uses in DRC with the highest financial returns per hectare were conversion of forests to industrial commodity tree crops, such as oil palm and rubber ($2360/ha). Multi-strata agroforests (cocoa and fruit trees) generated the next highest returns ($1448/ha). Annual crops generated the lowest returns per hectare ($367/ha for long fallows).

The greatest returns for retaining forests will likely be in areas with a diversity of commercially valuable nontimber forest products and where strong community traditions governing extractive uses are in force. Potential methods for retaining land in forest cover are through REDD payments supporting alternative non-forest based income opportunities, payments for ecosystems services (PES), assistance with marketing certified and value-added forest products, assistance with establishing ecotourism enterprises, and improved forest governance, especially in areas where traditional enforcement mechanisms are weak or non-existent.

6.6 OPPORTUNITIES FOR TENURE INVESTMENTS

The DRC does not yet have experience with on-the-ground formal devolution of rights and responsibilities to either decentralized state institutions or forest communities. However, the return of relative stability in its internal politics during the past decade provides a window of opportunity for implementing major and long-lasting forest governance reforms that would support nascent efforts to formalize and expand community rights to forest land and resources. Some of the key challenges to forest governance devolution in the DRC are listed below.

- Although the 2002 Forest Code provides for community forests, the national government has not yet issued the implementing decrees that are needed to operationalize them.
- Members of rural communities have questioned the appropriateness of the 2002 Forest Code's use of industrial concession guidelines for community-held concessions which are more likely to have a multi-use focus rather than a focus on logging marketable timber species (Forest Monitor, 2009a).
- The Forest Code leaves open the possibility that forest concessions can be allocated for purposes other than logging, including conservation, bioprospecting, tourism, and environmental services (Debroux et al. 2007). However, a formally recognized legal mechanism for creating "community conservation zones" that would explicitly allow communities to dedicate part of their customary lands for conservation purposes (and manage the conservation zone themselves) does not yet exist (Forest Monitor, 2009b).
- There is general lack of awareness of the provisions of the new forest code.

- There are many conflicts between concessionaires and local communities. For example, artisanal loggers complain that communities make unrealistic demands; communities complain that artisanal loggers don't live up to their agreements.

Tenure investments likely to contribute toward addressing the challenges noted above include the following.

- Support for the on-going efforts to develop and enact the implementing decrees for the 2002 Forest Code that would provide clarity on how community forests would be structured.

- A complementary activity would be assistance to fund a series of multi-stakeholder workshops to develop guidelines for community-held concessions, as well as language that would permit the creation of community conservation zones. The discussions on community-held concessions would need to clarify whether communities could opt for conservation concessions rather than forest product harvesting concessions.

- The provisions in the Forest Code for the community-held concessions and community conservation zones might most productively frame these as pilot or demonstration projects so as to encourage on-the-ground experimentation. The results of these experiments could then be used to develop a spectrum of approaches that communities could choose from, rather than requiring a one-size-fits-all approach.

- Donor assistance could usefully be employed to fund community-concession and community conservation zone demonstration projects.

- Support for outreach activities to educate communities, local government officials, forestry department personnel, loggers, timber concessionaires, and other stakeholders about the provisions of the forest code. The outreach activities might include mediation workshops in areas where conflicts between concessionaires and local communities are occurring with some frequency.

- Lack of clarity about use rights appears to be a major factor in these conflicts. Funding for applied research that documents and maps the spatial and temporal dimensions of forest uses and use rights would help shed light on the underlying causes of such conflicts. Research on use rights could be linked to community concession and conservation zone demonstration projects.

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7.0 ETHIOPIA

7.1 FOREST ATTRIBUTES

7.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Ethiopia's forest covers 12.3 million hectares or 47 percent of its land area (FAO, 2010). Most of Ethiopia's forested land is located in the southern and southwestern highlands; the north is largely devoid of large expanses of trees (Ofcansky and Berry, 1991). Nearly all of Ethiopia's forest is naturally regenerated secondary forest. Plantations cover about 511,000 hectares, or 4 percent of the country's forested area, and are primarily composed of *Eucalyptus spp* (FAO, 2010). Ethiopia's flora is extremely diverse, with somewhere between 6500 to 7000 plant species (Plant Genetic Resources Center, 1995). Its diverse forested ecosystems include montane moist forests in the southwest, lowland tropical forest in the eastern Gambella Region, dry evergreen montane forests scattered at higher elevations around the country, *Combretum-Terminalia* woodlands in the west, afroalpine and subalpine ecosystems in the northern and southern high mountains, and *Acacia-Commiphora* woodland in the southeast (FDRE, 2005). Ethiopia has the most extensive indigenous bamboo forests in Africa (Gebremariam et al., 2009).

Spiritual belief systems have played a strong role in shaping Ethiopia's present-day forest cover. Dry afromontane "church forests" surrounding Ethiopian Orthodox Tewahido Church buildings are among the last remnants of the indigenous natural forest in the northern highlands (Wassie et al. 2005). Spiritual traditions of indigenous groups also have contributed to the preservation of large tracts of dense forests in the southern highlands (MELCA, 2008).

Ethiopia relies on its forests for most of its wood products, including construction wood and fuelwood. Firewood and charcoal supply more than 90 percent of the nation's energy needs (FDRE, 2011). Many Ethiopians rely on locally gathered nontimber forest products, including honey, beeswax, wild coffee, several types of tree gums and incense, spices, and medicinal plants, for subsistence and income (FDRE, 2011). Forests are also important as a pasture lands and a source of livestock fodder (FDRE, 2011).

Ethiopia's annual deforestation rate was 1.11 percent between 2005 and 2010, slightly up from 1.05 in the previous five years (FAO, 2010). The primary direct drivers of deforestation and forest degradation in Ethiopia include agricultural expansion, fuelwood harvesting, and illegal logging (FDRE, 2008). The developers of Ethiopia's draft Readiness Preparation Proposal (R-PP) identify unclear user rights, the limited powers of local communities, and the lack of benefit sharing mechanisms for forested areas as indirect drivers of deforestation and forest degradation (FDR,E 2011).

7.1.2 CARBON STORAGE CHARACTERISTICS

Ethiopia has an overall score of Moderate on the Forest Carbon Index, with the most potential for investments in the southern and southwestern parts of the country (Deveny et al., 2009). Its forests store an estimated 219 million metric tons of carbon in above ground forest biomass (18 metric tons per hectare) (FAO, 2010). It ranks 27th among sub-Saharan African countries in its living forest biomass carbon (FAO, 2010).

7.1.3 REDD+ PLANNING AND ACTIVITIES

Ethiopia is a participant in the Forest Carbon Partnership Facility. It submitted a Readiness Plan Idea Note in March 2008 and drafts of its Readiness Proposal Plan in 2010 and 2011 (FDRE, 2010; 2011). Ethiopia's most

recent draft R-PP identifies the strengthening of forest law enforcement as a critical element of its REDD+ strategy. It calls for greater empowerment of community organizations, stricter attention to ensuring that the federal, regional, and district level forestry agents carry out their duties, expanding the forest administration's enforcement staff, instituting a certification and tracking system for timber, and supporting the judiciary system so that forest law violators are prosecuted. A dozen REDD+ projects have been identified, with most located in the southern highlands (FDRE, 2011). Ethiopia is a signatory to the UNFCCC, the Kyoto Protocol, and the UNCCD (FAO, 2010). One REDD project that is already underway is an ecosystem restoration and enhancement project in the Bale Mountain Ecoregion. Three management regimes will be tested: Community-based organizations with exclusive user rights; Joint Forest Management where community organizations and the regional forestry enterprise service jointly manage an area; and an area managed solely by the regional forestry enterprise service (Statz et al., 2008).

7.2 POLICY ATTRIBUTES

7.2.1 POLICY CONTEXT

Ethiopia has a federal system of governance, consisting of a national government with 9 semi-autonomous ethnically-based National Regional States. The federal government sets the framework for land and forest policy and legislation, but the regions have considerable flexibility in how they approach the implementation of these policies and laws (Tamrat, 2010).

Efforts to support forest governance devolution in Ethiopia must take into consideration the upheavals of the late 20th century that replaced entirely or substantially modified the country's customary tenure systems. After overthrowing Haile Selassie in 1974, the military-run Marxist government, known as the Derg, promptly nationalized all land and forests. The Derg also instituted a periodic land redistribution system to prevent re-concentration of land access. The resulting tenure insecurity created strong disincentives for villagers to plant or protect trees on agricultural lands (Stellmacher and Mollinga, 2009). At the same time, massive resettlement schemes, involving the displacement of hundreds of thousands of northern Ethiopians to the southern and southwestern highlands, disrupted customary tenure systems and contributed to a rapid decline of the country's forest cover (Stellmacher and Mollinga, 2009).

Participatory Forest Management (PFM), a form of co-management, emerged as a mechanism for addressing the inability of the state to enforce forest laws (Amente, 2006; Lemineh and Bekele, 2008). At the federal level, no policy direction has been issued for communal forest holdings, but two regions, Oromia and SNNP, have issued regional implementing laws recognizing communal forest and landholdings (MELCA, 2008). Oromia region has also taken the lead in creating a regional forestry agency, the Oromia State Forests Enterprises Supervising Agency, geared toward providing support to community-based forest enterprises and participatory forest management.

7.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Ethiopia has a very weak governance system as indicated by its Worldwide Governance Indicator scores (see Table 7.1), all of which are negative. It has a particularly low score for political stability, which is reflected on the ground in on-going threats of secession by several of the National Regional States and periodic outbreaks of armed violence. Ethiopia also has a very low score for voice and accountability, which bodes ill for the success of participatory forest management and raises doubts about the country's ability to implement the broad-based consultation and benefits-sharing safeguards associated with REDD+. On the positive side, its scores for government effectiveness, regulatory quality, and rule of law increased between 2002 and 2009. The country's high incidence of corruption, lack of transparency, and limited accountability are likely to hamper efforts to devolve forest governance.

TABLE 7.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

Indicator (-2.5 to +2.5)	2009	2002	1996	Direction (2002-2009)
Voice and accountability	-1.26	-1.24	-0.83	-
Political Stability	-1.73	-1.24	-0.96	-
Government Effectiveness	-0.41	-0.92	-1.28	+
Regulatory Quality	-0.98	-1.23	-1.86	+
Rule of Law	-0.77	-0.85	-0.95	+
Control of Corruption	-0.71	-0.58	-1.08	-
Corruption perceptions index = 2.7 (Rank 116 of 178) (Transparency International 2010)				

The lack of a dedicated institution for forestry sector policies and programs within the federal and regional governments has greatly hampered efforts to develop and implement key pieces of forest legislation conducive to forest governance devolution.

Since the early 2000s, Ethiopia has instituted reforms to harmonize regional and federal laws related to land tenure and use, and it is engaged in a national effort to register and certify all agricultural and urban lands. The hope is that increases in agricultural productivity linked to greater tenure security will encourage farmers to plant and protect trees in their farm plots, as well as reduce pressure for rural inhabitants to engage in commercial logging and firewood cutting on state forest lands (USAID Country Profile, n.d.).

Policies likely to have a negative impact on forest governance devolution efforts include the 2007 Biofuel Strategy, which proposes to lease out 24 million hectares of suitable "unutilized" land to foreign and domestic investors (FDRE, 2007a), and various Federal proclamations and associated regulations designed to encourage large-scale development investments and associated regulations. A number of the investments that have been approved have led to substantial areas of forest being cleared (FDRE, 2011).

7.3 TENURE ATTRIBUTES

7.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

Ethiopia's 1995 Constitution vests ownership of land and natural resources in the state and peoples of Ethiopia. The state has interpreted the Constitution to mean that land and resource ownership rights rest solely in the hands of the state. However, some Ethiopians contest this interpretation, asserting that the Constitution should be interpreted to mean that ownership rights over land and natural resources are to be shared equally between the state and the various peoples of Ethiopia (i.e., Amhara, Oromo, etc.) (Woldemariam and Fetene, 2008). The Constitution explicitly states that land is not subject to sale or other forms of alienation (Tamrat 2010). However, under the 1997 Rural Land Administration Proclamation, farmers have lifelong, inheritable and transferable use rights to land and trees planted on their land, and private investors have the right to use land in exchange for a fee (Tamrat, 2010). Peasants and pastoralists have the right to obtain free use rights over rural land for an unlimited time period (Tamra,t 2010). The Ministry of Agriculture and Rural Development is charged with developing forest policies and laws, and responsibilities over forests are shared by the federal and regional governments.

The Forest Development, Conservation and Utilisation Proclamation of 2007 (FDRE, 2007b) established two categories of forests, private and State forests. Forests located in rural areas can be developed by private individuals, associations, governmental organizations, NGOs, and business enterprises in accordance with laws established at the regional level (Part Two, Section 4.1). The 2007 forest proclamation requires that private forest holders develop a regionally-approved management plan (Part Two, Section 4.3); private forest holders must also obtain a permit from the local governing body prior to harvesting and transporting forest products (Part Two, Section 7.1).

The 2007 forest proclamation contains language that provides a foundation, albeit a very weak one, for participatory forest management of State forests. Harvesting of fodder, fallen wood, herbs and fruits, as well as the keeping of beehives on State forests, can only be done in accordance within the framework of a regionally-approved forest management plan, and only under permit from the local forest governing body (Part Three, Sections 10.3 and 10.4; Section 14, Section 3). Funds for mapping and gazetting State forests or for developing management plans have been lacking (Gebremariam et al., 2009).

Ethiopia lacks federal policy guidance and legislation supportive of participatory forest management. Several of the states have developed regional-level legal frameworks that provide a more secure environment for local-level forest management. Since the mid-1990s, SOS-Sahel, FARM Africa, and GTZ have provided support for Participatory Forest Management initiatives in southern and southwest Ethiopia. Although Participatory Forest Management groups vary in how they function, the basic principle is that a community forest user group enters into a forest management agreement with the district forest office and the local village administration (Amente et al., 2006). The forest user group pays an annual rent for use rights to the forest block allocated to them. In return for use rights, the groups agree to prevent further agricultural encroachment and maintain the existing forest cover (Amente et al., 2006). Members have the right to harvest wood and other forest resources for domestic use and sale, graze their livestock within the forest, and cultivate existing farm plots located in the forest block (Amente et al., 2006). In some cases they can sub-lease grazing rights to non-members. The groups set up their own internal structure, but they must develop and adhere to a government-approved forest management plan. The district forest office has responsibility for ensuring that an annual forest cover assessment and settlement survey is conducted, and provides technical and organizational assistance to the forest user groups (Amente, 2006).

As of 2008, nearly 200 PFM groups had been established in Oromia and Southern Nations, Nationalities, and People's (SNNP) regions; they managed roughly 140,857 hectares of State forest land (MELCA, 2008). Winberg's (2010) survey of aid organizations supporting PFM projects in 2010, estimated that PFM forests covered a minimum of 211,000 hectares, and involved at least 30,000 households. Forests managed within the framework of Participatory Forest Management programs typically are highly degraded due to extensive illegal logging, clearing for agriculture, and excessive grazing (Amente, 2006).

Data from Ethiopia's pilot forest governance devolution projects indicates that these efforts have tended to have positive ecological and livelihood outcomes. Forest cover assessments of lands included in Ethiopia's pilot PFM projects indicate that the areas managed by community forest user groups have experienced improvements in their ecological conditions. The rate of illegal tree cutting has been reduced and natural regeneration has increased (Amente, 2006). The gains in natural regeneration are attributed primarily to the user groups' rules prohibiting non-members from grazing their livestock in the forest blocks and establishing grazing zones within the forest block for user group members (Amente et al., 2006). Also non-members began to plant trees to fill the gap in products since they no longer had access to community forest group blocks; they started with fuel wood trees and are now moving into fruit trees (Amente, 2006). Satellite imagery analysis in the Dodola area showed a net increase in forest cover of 3 percent between 2002 and 2006 compared with an annual net deforestation rate of 3 percent prior to the establishment of PFM in the area (Statz et al., 2008).

PFM also appears to have had a positive impact on livelihoods, although these gains are probably closely linked to substantial outside investment by NGOs and bi-lateral donor agencies in complementary livelihood programs. In the Bale Mountains, for example, community-based ecotourism enterprises are bringing in $10,000 per year to the area, money which is distributed among a number of guides, hut keepers, horse providers, and horse handlers (Amente, 2006). Additionally, 20 percent of the lodging payments by tourists and a percentage of the forest rent support local development projects, such as school construction (Amente 2006). Linking the PFM projects to livelihood diversification has also benefited women in some user groups by providing them access to modern beehives, which unlike traditional hives, can be placed around the homestead where women are better able to care for them (Lemenih and Bekele, 2008).

7.3.2 TENURE SECURITY

Community held land and forest rights are generally considered to be very insecure in Ethiopia. Not only are they subject to transfer to private holdings, but both Federal and regional land administration law state that appropriations of community holdings are not eligible for compensation (Tamrat, 2010). The security of tenure for PFM forest allocations is also tenuous as their continued existence is contingent on an annual assessment as to whether the user groups are meeting their management obligations.

In 2005, Federal Rural Land Administration and Land Use Proclamation No. 456/2005 established a system of land certification with the goal of resolving the numerous conflicting claims to land as a means for reducing tenure insecurity and encouraging investments in land and resource conservation (USAID Country Profile, n.d.). However, by 2010, only four of nine Regions had initiated implementing legislation and started issuing land holding certificates (Tamrat, 2010). An unintended negative side effect of the certification and registration effort has been an increase in forest clearings as farmers seek to secure agricultural rights on forested lands (Gebremariam et al., 2009).

In the Bale region, the user groups have a democratic system of governance consisting of a general assembly composed of all members, an executive committee, and various other committees. The general assembly includes women householders, as well as men, and all committees are required to have a least one woman representative. The groups develop their own by-laws for regulating forest use by group members, as well as access by non-members (Amente, 2006).

7.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

PFM contracts provide the user group's members exclusive use rights to harvest forest resources for commercial and domestic use. Weak enforcement capacity is a common problem for most Participatory Forest Management forest user groups (Lemineh and Bekele, 2008). Prolonged civil war, periodic famines, large-scale resettlements, and changes in religious belief systems have greatly weakened many traditional authority systems (Woldemariam and Fetene 2008). At the same time, local forestry offices are unable to fill the gap in enforcement capacity as they are badly understaffed, poorly trained, and chronically underfunded (MELCA, 2008). Weak support by forest officers and the local courts has also hampered efforts by PFM groups to exclude other users (MELCA, 2008).

7.4 USER GROUP ATTRIBUTES

7.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

In the areas of Ethiopia where Participatory Forest Management (PFM) has been implemented (i.e., Oromiya and SNNPR) the inhabitants are typically heavily dependent on forests for meeting subsistence needs and earning cash income. A multi-use agro-sylvo-pastoral system predominates, with residents of lower elevation settlements relying more heavily on subsistence agriculture, while people living at higher elevations derive more of their livelihood from forest resources (Amente, 2006). In some forests, groups located at some distance may have longstanding seasonal use rights over pasture lands (Lemineh and Bekele, 2008).

7.4.2 POWER RELATIONS

The relationship between local forest users and the Ethiopian state is complex. (Woldemariam and Fetene, 2008). In some areas, administrators at the *kebele* level, the lowest administrative division, acknowledge the de facto operation of local tenure rules over forests, and forest community leaders sometimes exercise considerable power and influence at the local-level of state governance (Stellmacher and Mollinga, 2009). On the other hand, local forest users are sometimes powerless in the face of decisions made at regional and federal levels to allocate state lands to private investors (Woldemariam and Fetene, 2008). For example, communities near the Sheka Forest in southwestern Ethiopia have been unable to prevent state-authorized

tea and coffee plantations from clearing forested areas managed under a customary tenure system (Woldemariam and Fetene, 2008). Of particular concern is the lack of de jure legal status of the forest user groups or forest dweller associations. This concern has prompted some forest user groups to reorganize themselves into cooperatives, which do have legal status (Muir, 2005). However, cooperatives are designed to be business enterprises not forest protection and management organizations. In some areas, the shift to a cooperative model has forced members unable to pay the cooperative membership fees to drop out of the group and lose their rights of access (Lemineh and Bekele, 2008).

PFM groups in southern Ethiopia range from ethnically homogenous groups that can govern their forest blocks based on pre-existing tenure rules without generating conflicts to heterogenous groups that have to figure out new systems that can incorporate the diversity of users who now wish to have access to local forests. In Bale, for example, PFM groups found that they had to provide non-members access to pastures and firewood to reduce conflicts between members and non-members (Amente, 2006). Some user groups have formed umbrella organizations at village and sub-village levels to mediate conflicts within and between user groups that the user groups can't resolve themselves (Amente, 2006). Groups that tend to be left out or marginalized in the management of PFM groups include women, recent migrants, members of lower castes in areas where caste systems predominated, and pastoralists (Lemineh and Bekele, 2008).

7.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

Ethiopia is considered one of the world's biodiversity hotspots and is home to numerous floral and faunal species found nowhere else. Many of the participatory forest management efforts are taking place in areas with high biodiversity. Support for PFM has come from FARM-Africa, SOS-Sahel, and the GTZ. The European Development Fund has recently agreed to provide funding to expand PFM initiatives. World Vision-Ethiopia has provided support for the Humbo Natural Regeneration project as part of the Clean Development Mechanism effort.

7.5 ECONOMIC ATTRIBUTES

Ethiopia has a medium low opportunity cost for retaining forests (Deveny et al., 2009). The average country-wide cost is $12.65/ metric ton CO_2. Opportunity costs for alternative uses of forests under traditional management systems (using a 10 percent discount rate) are $1,123/ha for maize production, $1,661 for fuel wood production, and $14,490 for timber production (Statz et al., 2008). Areas with high profit potential for generating large amounts of low-cost carbon are located primarily in the southwestern highlands.

Potential methods for retaining land in forest cover include REDD payments supporting alternative income generation for communities, payments for ecosystems services (PES), assistance with marketing certified forest products, and improved forest governance. The Participatory Forest Management programs operating in the southern highlands have found that technical assistance for individual and community-based forest enterprise development, such as improved beekeeping methods, ecotourism, and fruit tree plantings, has helped reduce tree-felling for charcoal production by providing forest users with alternative forest-based income earning opportunities (Gebremariam et al., 2009).

7.6 OPPORTUNITIES FOR TENURE INVESTMENTS

Initiatives supporting devolution of rights to forests in Ethiopia have occurred in a limited number of regions, most notably Oromiya and SNNP regions. Programs have received considerable planning and material support from international NGOs. The federal government, however, has not demonstrated much interest in these area-based initiatives. A review of the literature on forest governance devolution in Ethiopia reveals the following weaknesses in its tenure system.

- Ethiopia lacks national-level policy guidance for forest rights devolution;

- The only avenue for community forest associations to acquire legal status is to form a cooperative, a structure that does not mesh well with many traditional community institutions;
- There are strong disincentives in Ethiopia's current land law for farmers to keep land in forest cover;
- Communities lack the right to exclude outsiders from communally managed lands and have little or no say in the assignment of land rights to influential outsiders.

Steps that can help remedy these weaknesses in Ethiopia's forest governance system, as well as other measures for strengthening community rights to forest resources are listed below.

- Support is needed at federal and regional state levels for legislation that would protect community holdings from being allocated to private investors without fair compensation and without the benefit of a broad-based public consultation process with affected communities and individuals. This would address ongoing issues of tenure insecurity that serve as a disincentive to planting and protecting trees.
- Support is needed for the establishment of federal, regional state, and local government institutions with a clear and funded portfolio to guide forest sector policy and programming at federal, state, and local levels.
- Support is needed for legal reforms that would work toward eventually providing communities or indigenous peoples in Ethiopia with a fuller and more durable bundle of rights to forest land and resources than is currently offered through the prevailing short-term lease model of Participatory Forest Management. In the short term, assistance could be directed toward legal reforms that recognize communities as legal entities, thereby providing a greater measure of security than they currently enjoy.
- The longer term goal of such legal reforms would be to provide communities with a range of much more robust tenure options, such as the communal titles and long-term renewable community and household concessions found in Latin America. A system for registering communal rights could build on the lessons being learned through the implementation of the USAID-funded land registration process currently underway.
- Support for building community and household capacity to participate effectively in forest product and ecosystem services (including ecotourism) markets is likely to be a critical element for successful long-term community forest governance. The Bale Mountain experience might serve as a guide for how to structure such forms of assistance.
- A series of multi-stakeholder dialogues centered around the importance of eliminating the principle of *terra nullis* (i.e., that land not occupied has no owner and that it is thus available for the state to give away) from all land and forest-related law is an essential first step in developing a body of natural resource law that is supportive of pastoralist and forager lifeways. It is very unlikely that there is any forested land that is "unoccupied" as most likely someone uses it seasonally or with some degree of frequency. The principle of *terra nullis* is also devastating for pastoralists who are likely to lose common grazing lands because they have not been cleared or settled.

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8.0 GHANA

8.1 FOREST ATTRIBUTES

8.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

According to the FAO, about 21.7 percent of Ghana was forested in 2010, constituting 4.9 million hectares of the country's land area. About 5.3 percent of the total forested areas is primary forest (260,000 ha.) A roughly equal amount of forest is planted. As of 2001, there were 279 forest reserves in Ghana, most established during the colonial era under the Forest Ordinance Act of 1927. According to Owuba et.al. (2001), "while the forest reserves are relatively intact, there is conflict over ownership, exacerbated by scarcity of afforestable land for cocoa cultivation." It is estimated that about 50-70 percent of the total area of forest reserves in parts of the western region of the country have been illegally encroached (England, 1993). Of a total of 16,340 km^2 of forest reserves in the tropical high forest zone of the country, only about 9000 km^2 are in stable condition. The rest are either degraded or significantly depleted (Hawthorne and Abu Juam, 1993).

Ghana has experienced extensive loss of forests over the past 20 to 30 years. Between 1990 and 2010, total forest cover declined from 7.4 million hectares to 4.9 million hectares, a net loss of 2.5 million hectares, or 51 percent of forest cover. The rate of forest loss has been increasing in recent years, to about 2.19 percent annually between 2005 and 2010 from 1.97 percent per annum between 2000 and 2005. The official allowable annual sustainable cut of timber for domestic use is 2 million metric tons. This is exceeded by 1.7 million metric tons annually. The area of planted forest increased from 60,000 hectares in 1990 to 260,000 hectares in 2010. Several major threats drive deforestation. Cocoa is a principal source of rural livelihoods. Rapid growth of cocoa exports in the 1980s (by 70 percent between 1983 and 1988) resulted in considerable loss of forest cover. A 1974 forest law reform vested ownership of all timber in the central government, introducing high opportunity costs for keeping trees on land otherwise suited for crops. A large and politically well-connected domestic timber industry is, along with clearing of forests for cocoa, a major driver of deforestation.

8.1.2 CARBON STORAGE CHARACTERISTICS

In 2010, Ghana's forests contained an estimated 381 million metric tons of carbon in living forest biomass, down from an estimated 564 million metric tons in 1990 (Mongabay, 2010).

8.1.3 REDD+ PLANNING AND ACTIVITIES

Ghana has reached the piloting phase of the REDD Readiness process and has received funding support from the World Bank Forest Carbon Partnership Facility. A national REDD+ strategy is currently under development by the central government. Knowledge of REDD+ among the general population and even key stakeholder groups is relatively poor. International NGOs and Ghanaian partners are making some effort to take up the slack. International Institute for Environment and Development (IIED) and International Union for the Conservation of Nature (IUCN) are among international NGOs with REDD+-related projects in Ghana. Both appear to be focused particularly on tenure issues (including weak farmer and community ownership rights to trees) as potentially major constraints to getting REDD+ benefits into the hands of farmers, women and the poor.

IUCN is implementing a pilot project in Wassa Amenfi West District intended to inform poor residents especially of REDD+ initiatives and the potential for REDD+-related programs to reduce poverty and increase incomes. Of particular interest to the project is the extent to which "Reform of existing benefit sharing mechanisms for timber can be an example for REDD+ benefit distribution. The payment of royalties

to traditional 'stool' authorities as part of customary law can be reviewed to include landowners and land users to provide solutions as part of REDD+-plus arrangements." (IUCN, 2011).

8.2 POLICY ATTRIBUTES

8.2.1 POLICY CONTEXT

Ghana's forests were of considerable interest to the colonial administration for purposes of timber extraction and export. The industry was fairly well organized and dominated by international companies such as Unilever. Large-scale commercial forest exploitation was steadily taken over by Ghanaian-owned enterprises after independence, with high levels of vertical integration segmented among a logging industry, a milling industry and a furniture manufacturing industry. The industry has considerable political power and has been able to strongly influence forest policy and legislation in its favor and to ignore or subvert inconvenient aspects of the law and regulations, and to generally frustrate regulation and efforts to tax the industry. One study found that cocoa producers were subject to 33 percent taxes on the value of production while the equivalent taxes collected for timber producers is 2.5 percent.

According to Tropenbos International (2010) the 1994 Forest and Wildlife Policy is strongly timber-oriented, "tilting national forestry planning towards industrial logging and processing enterprises to the peril of small and micro forest enterprises (SMFEs) and other services forests provide." Moreover, "The 1994 Policy has been unsuccessful at addressing the demand for timber from the domestic market." There is an emerging effort, promoted by international NGOs and bolstered by global trends towards rights devolution, forest conservation, rural poverty alleviation and climate-change mitigation, to recast forest policies in ways that promote greater economic benefits for low-income forest users and arrest forest losses. A Forest Policy Review process was established in the Ministry of Lands and Natural Resources in 2010.

Ghana concluded a Voluntary Partnership Agreement (VPA) with the EU in November 2009. (About 40 percent of Ghana's wood exports go to Europe.) The agreement binds Ghana to ensuring that all timber exported to the EU is harvested according to Ghanaian law. As of March 2012, the Government of Ghana and the European Union were still negotiating an implementation framework for the agreement. The Legality Assurance System needed for tracking the flow of timber and ensuring independent monitoring is anticipated to be functional in 2013.

8.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Unlike many of its neighbors, Ghana has positive scores for five of the six World Governance Indicators (see Table 8.1), suggesting that it has relatively good conditions for successful implementation of forest governance devolution. Moreover, with the exception of the rule of law indicator, all of its WGI scores increased between 2002 and 2009.

TABLE 8.1: WORLD GOVERNANCE INDICATORS (WORLD BANK 2011)

(-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	+0.49	-0.02	+
Political Stability	+0.04	-0.27	+
Government Effectiveness	+0.00	-0.20	+
Regulatory Quality	+0.09	-0.46	+
Rule of Law	-0.08	-0.03	-
Control of Corruption	+0.06	-0.29	+

Corruption perceptions index score = 4.1 (Rank 62 of 178) (Transparency International 2010)

8.3 TENURE ATTRIBUTES

8.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

Rural and urban land in Ghana is largely under the authority of traditional authorities. Their trustee and administrative rights and responsibilities in the land tenure system are firmly entrenched in the constitution. Customary forest management took the form of protection of designated sacred groves—often the burial places of chiefs—and protection of some forests as wildlife sanctuaries and hunting areas. Land granted to clans for agriculture and housing typically included considerable areas of forest cover, with trees cut or harvested when additional cropland was needed. Forests have been under considerable pressure over many decades, due to clearing of land for agriculture and cocoa production and due to the growth of the commercial timber industry.

Rights to naturally regenerated trees are nominally vested in traditional authorities, but according to the Tree and Timber Decree of 1974, management and commercial rights to timber species belong to the State in both reserved (protected) and off-reserve areas (areas outside of forest reserves and national parks.) The 1974 Decree, promulgated during military rule, effectively served the interests of the timber industry by putting ownership and regulatory authority of timber in the hands of the central state. Commercial timber companies secure rights to harvest timber species by procuring permits from the Forestry Commission. While the Decree mandates the Commission to grant permits with reference to sustainable off-take rates, it has generally failed to establish or enforce sustainable rates of off-take and has been ineffective in collecting logging, or stumpage, fees. Fees collected from reserve forests are by law to be distributed on the basis of a constitutionally prescribed formula, with 25 percent going to district assemblies, 25 percent distributed among various levels of traditional authority, and 50 percent to the Forestry Commission. The state also owns off-reserve naturally regenerated trees, and is entitled to 40% of the total stumpage collected from off-reserve logging operations (Boakye and Affum-Baffoe, 2006). Levels of fee collection are low and there is no provision for distributing fees to landholders or local communities. The 1974 Decree provides that farmers have a right to compensation for damages to crops resulting from commercial harvesting, but this happens in less than 20 percent of cases.

Under the Timber Resource Management Act of 1998, a series of requirements to encourage more sustainable forest management and reduce conflicts between logging interests and communities over timber harvesting operations, were enacted. In particular, the law required the state to obtain written authorization of the individuals or groups owning the land on which timber contracts were to be granted. The act was subsequently modified in 2002 to prohibit the state from granting timber rights on privately held forest plantations or land with trees owned by private persons (Osafo, 2010). The Forest Plantations Development Funds Amendment Act of 2002 further strengthened farmers' rights to planted trees and created incentives for them to participate in the Modified Taungya System initiative (described in more detail later in this section) (Kalame et al., 2011). The Ghanaian government has also introduced requirements that logging companies enter into social responsibility agreements, which require them to commit up to 5% of their timber revenues to providing social amenities, such as schools or clinics, to communities located within timber concessions. However, enforcement of this requirement is weak (Osafo, 2010).

Ghana's Modified Taungya System is an interesting approach that seeks to encourage replantation of state forest reserves (Abugre et al., 2010). The taungya system was originally introduced to Ghana in the 1930s. It gave farmers access to degraded forest reserve land on which they could plant crops in exchange for planting and maintaining timber trees. However, the farmers had no decision-making powers or rights to the timber. The program was suspended in 1984 and replaced in 2002 by the Modified Taungya System. Under the new system, farmers play a central role in decision making and receive a share of the timber revenues (40% to the farmer, 40% to the Forestry Commission, 15% to the landowner – usually a traditional leader, and 5% to adjacent communities), as well as having access to cropland while the trees are maturing. The program has been quite popular, with an estimated 60,000 ha of trees planted in its first three years, including both exotic species, such as teak (*Tectona grandis*) and various types of eucalyptus, and native tree species (Kalame et al.,

2011). However, preliminary evidence suggests that forestry officials sometimes fail to pay farmers their share of the revenues (Kalame et al., 2011).

Ghana's 1994 Forest and Wildlife Policy was meant to provide a blueprint for a more balanced approach to forest sector development and participation. Among other provisions, it established the concept that individuals could have the right to plant and inherit trees in forest reserves (Boakye and Affum-Baffoe, 2006). However, the policy has been widely criticized for not representing a meaningful departure from the status quo. According to a 2006 study by Forest Watch Ghana entitled "Forest Government in Ghana: An NGO Perspective," the 1994 policy "does not choose between fundamental paradigms for forestry, but gives the impression that all agendas can co-exist, reading rather like a menu of competing interest groups' agendas. It fails to engage sector-specific problems. To the extent that forest regulators and politicians paid any attention to it at all, they clearly read it as license to continue business as usual" (Forest Watch Ghana, 2006). Post-1994 forestry legislation largely ignores community rights, despite the fact that the 1994 policy commits the government to a policy of Collaborative Forestry Management (CFM). Reform legislation prepared with the assistance of DfID consultants has been largely ignored. Ghana is currently in the midst of reforming its Forest and Wildlife Policy and itsforest management and timber laws, presenting an opportunity for inclusion of tree tenure reform that would permit ownership of naturally regenerated trees in addition to planted trees (EU Forest Watch, 2012).

8.3.2 TENURE SECURITY

Customary land tenure rights are generally secure, with bona fide members of clans and families exercising a broad range of rights assigned to them by traditional authorities overseeing their areas of historic family residence. These include strong rights of inheritance within families and rights to lease and rent land to neighbors and increasingly to entrepreneurial farmers from outside of the community. Traditional authorities sometimes interpret what some consider to be essentially administrative or stewardship rights over land to extend to primary ownership rights, increasingly so in areas of high demand for land, such as peri-urban areas around Accra. As of 2009, about 20 principal chiefs have established Customary Land Secretariats, staffed by paid administrators, who manage land transactions and maintain increasingly sophisticated records systems.

The Tree and Timber Decree of 1974 has had the effect of severely limiting forest management rights of traditional authorities and tree tenure rights of farmers. The Decree has been widely criticized as corrosive of local forest stewardship. Farmers have little interest in maintaining timber on their land when all rights are vested in the states and mature trees may be sold to commercial timber interests without a share of sales income accruing to the farm owners.

There are a variety of "under-implemented" laws that have been introduced since 1974 intended to ameliorate the negative effects of the Decree on community and farmer rights. For instance, the Economic Plants Protection Decree (1979) states that, "no felling rights with respect to timber shall be granted where such timber trees stand in farms were specific crops like cocoa are cultivated" (section 4 (1)). The Timber Resources Management Act (Amendment), 2002, provides that "timber rights should not be granted on farmland in off-reserve areas without the written authorization of the individuals, groups or owners concerned." The Act also provides that "farmers have a right to participate in inspection prior to logging and to veto felling for reasons that include, but are not limited to, damage to crops or soil conservation/erosion concerns." (Kotoomba, 2009). Recent evidence suggests that farmers have a limited understanding of their rights under the 1979 Decree and the 2002 Act. Significantly, the ownership rights of farmers to trees they have planted has recently been affirmed by the government and consideration is being given to development of system to register individual tree ownership (IUCN, 2011.) Importantly, Ghanaian law treats all planted trees the same and ownership rights apply to both native and exotic species (Kalame et al., 2011).

Katoomba (2009) considers the question of the role of tree ownership in promoting conservation behavior and for paying farmers for keeping trees on land under their ownership. "The landowner or land user neither owns, nor has economic rights to timber trees naturally occurring on their land." However farmers "clearly influence the vegetation that is allowed to grow, and for how long. So the question emerges, what will be their

rights to credits for helping to conserve the forest carbon? If they cannot own the tree, can they have the right to the REDD benefit of carbon stored inside it."

8.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Rights to forests and trees are vested principally in the State in terms of the Trees and Timber Decree of 1974. More recent legislation has sought to give communities and farmers the right to participate in management decisions affecting harvesting of commercially valuable trees occurring on individual farms. These laws have been weakly implemented. Mechanisms for sharing timber harvesting ("stumpage") fees do not include farmers who stand to suffer damage to cocoa and other crops when timber is removed from their farms. Mechanisms for compensating farmers for damage appear not to work very well. The majority of Ghana's cocoa is grown in conditions with little to no shade, so farmers growing cocoa have little incentive to plant other tree species with their cocoa trees. Although farmers do have rights to a percentage of the value of planted trees, whether native or exotic species, they are required to register their planted trees in order to exert that right. The cumulative result is little farmer interest in tree planting and forest management.

In light of this logical disinterest on the part of farmers in tree production and protection, Owubah et al. (2001), surveyed 354 farming households for their views on how variable tenure and economic conditions would affect adoption of sustainable forest management practices. The study was particularly interested in assessing how assignment of a greater array of rights to trees and fuller payment of compensation for crop losses due to timber extraction might affect farmer willingness to invest in the management of naturally occurring and planted trees on their farms. Variables considered included: (1) comprehensiveness of rights; (2) duration of rights to trees (10 years seen by authors as minimum period for harvesting teak, the fastest growing species of commercial value); (3) economic compensation (here referring to payment for damages to farms resulting from selective harvesting of timber on or near farms, but also seen as a proxy for preserving trees, including mature trees on farms); (4) security (treated as a binary variable--land formally registered or not-- which is of doubtful relevance as there is no title registration in affected areas, which authors acknowledge; (5) exclusiveness, or "extent to which a tenure holder can prevent others from infringing on his rights regarding use of non-timber forest products;" (6) transfer rights ("freedom given to a tenure holder to exchange rights to the forest measured as capability to bequeath land to family members, rent, sell, pledge, give any part to a friend or stranger.); and two exogenous variables, (7) education and (8) number of farms.

Four variables proved statistically significant at the 5 percent level: economic compensation, duration, transferability, and number of farms. With respect to compensation, the authors noted that, "the odds of preserving indigenous trees decrease if farmers are not compensated for damage to crops resulting in logging operations". Results suggested that, "On the other hand, the odds of preserving trees increase when farmers are either compensated or when there is no damage to their crops [due to removal of timber by commercial timber enterprises]." With respect to duration, "tenure duration of less than 50 years decreases the odds of preserving indigenous, economically valuable trees." Moreover, results with respect to transfer rights indicate that "increased transfer rights is essential for such long-term investments as preservation of tropical hardwood trees on farmlands." The authors conclude,

> "Rights to forestland could [sic] be made as comprehensive as possible, including rights to dispose of economically valuable trees. Implementation of such a change could [sic] begin with an amendment to Ghana's Trees and Timber Decree of 1974, [which] vests all tree species in the government. *In this regard, it may be important to treat trees as commodities just as cocoa and coffee, and credit facilities extended and technical assistance extended to farmers.* As an incentive, farmers could be given a percentage of the value of marketable trees logged from their lands, and the amendment could provide for periodic review of the formula for paying benefits." (Owuba et al., 2001: 262)

8.4 USER GROUP ATTRIBUTES

8.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

Ghana has a population of about 21 million people. The domestic timber industry employs about 100,000 people. One study estimates that about 3 million people derive significant portions of their livelihoods from Small to Medium-Sized forest-based enterprises (Tropenbos International, 2010).

8.4.2 POWER RELATIONS

The relationships between the state forestry officials and local communities are fraught with tension and feelings of distrust. For more than 100 years, the state has reserved for itself the right o manage the country's forest reserves, but in many cases has permitted timber and mining companies to fell trees in areas where rules against felling are enforced for community residents (Opoku, 2006). As noted earlier in this case study, the Forest Commission also has a poor record of collecting and distributing the benefits from timber harvesting as required by law (Opoku, 2006). Moreover, forest communities often to do not benefit from the monies that do make it to the District Assemblies (the lowest level of the central government), traditional authorities, or the "stools" (Opoku, 2006). Forest Watch Ghana, a coalition of local civil society organizations and international organizations, has worked over the past decade to provide communities a greater voice in forest management and to have an opportunity to enjoy more of the benefits associated with forest management. In particular, the coalition hasplayed a vital role in pushing Ghana to develop a Voluntary Partnership Agreement through the EU's Forest Law Enforcement, Governance, and Trade program as a means to halt illegal logging and reduce deforestation (EU Forest Watch, 2012).

8.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

Ghana is biologically very diverse, and is divided into two major ecological zones, the tropical high forest in the south and the savanna in the north. The Upper Guinean rainforest extends into Ghana, and is both one of the world's richest and most threatened land-based econsystems (US Forest Service, 2011). External environmental organizations, such as Wood is the primary source of domestic cooking fuel for Ghana, and fuelwood harvesting as well as agricultural clearing have contributed to extensive deforestation and soil degradation. The health of Ghana's forests is thus closely linked to food security (US Forest Service, 2011).

8.5 ECONOMIC ATTRIBUTES

The forestry sector constituted about 6 percent of GDP (between $280 million to $350 million) in 2008 and ranked fourth in significance behind gold, tourism and cocoa (though oil is likely to move rapidly up the GDP scale in light of new off-coast oil reserves coming into production). Forestry sector's contribution to GNP is measured in consumptive value and one source estimates this would double with fuller accounting of existing non-consumptive forest benefits, and those especially related to provision of environmental services.

Timber harvesting is a source of revenue, in the form of stumpage fees, for the central government, traditional authorities and district assemblies (The Forestry Commission receives 50 percent of the fee, traditional authorities 25 percent, and district assemblies 25 percent). Communities and farmers currently receive no portion of the fee, though farmers suffer considerable damage to their crops and cocoa, subject to payment of compensation, from timber harvesting taking place on their land.) Levels of revenue collection are generally low.

8.6 OPPORTUNITIES FOR TENURE INVESTMENTS

The case study of Ghana's forest tenure reform efforts over the past two decades reveals the following areas of concern.

- Farmer and community rights to forests and naturally occurring trees, both under customary and statutory law, are currently very weak. Their rights to planted trees, whether native or exotic species, are much stronger albeit shared with the state and traditional rulers.

- The domestic timber industry is politically influential and has generally resisted effective regulation. The industry has had relatively unfettered rights to harvest trees occurring on farms and in community forests through permits granted by the Forestry Commission.

- Traditional authorities are the nominal owners of trees and forests. Exercise of their rights was weakened by the 1974 decree, which put management rights in the hands of the Forestry Commission, facilitating fairly unfettered commercial access by loggers to all species of trees trees occurring on private farms without compensation to farmers (apart from payment for damages to crops and cocoa trees.) Farmers now have rights to a portion of the timber revenues derived from native and exotic species that they have planted; requirements are also in place that the state obtain the landowners' permission before issuing timber contracts for naturally regenerated trees off-reserves. Given the value of many timber trees, it is likely that any weakening of the State's regulatory rights over trees will likely result in traditional chiefs seeking to assert a fuller range of customary rights over trees, with the possibility that the rights of the individuals managing forested lands may not be strengthened.

- Customary land tenure rules are more or less exclusively in the hands of chiefs, as their roles, rights and responsibilities in the customary system are constitutionally entrenched and generally not subject to statutory regulation. Chiefs increasingly assert ownership rights over land and treat land as a commodity to be rented or sold.

- Policy analysis and debate over REDD+ in Ghana will likely divide between the question of devolving clearer ownership rights to trees to farmers and local stewards of community forests and compensating these stakeholders directly for carbon sequestering, or of bringing farmers and communities into revenue sharing schemes that distribute REDD+ payments among government, chiefs, NGOs, communities and farmers on the basis of a revenue-sharing formula. The distribution of power and the political weight of key vested interests would likely favor the latter approach, leaving in abeyance questions of the likely weak incentivizing effects of this approach on farmer behavior, or leading to over-reliance on rule enforcement and policing.

Investments in tenure system reform that could be taken to address these concerns include the following t

- Donor assistance for developing systems for efficiently titling tree rights could yield considerable returns, including insights for possibly registering rights to naturally occurring trees and for linking registered rights to REDD+ payment schemes.

- Support for independent third party monitoring of logging activities as part of Ghana's Voluntary Partnership Agreement with the European Union could help address the power imbalance between large-scale timber companies and communities, as well as reducing the possibilities for logging related corruption on the part of state and local officials.

- Support for research examining how customary land tenure rules influence forest management behavior in off-reserve lands is needed in order to better understand the strengths and weaknesses of such systems in terms of ecological sustainability outcomes and equitable sharing of benefits.

- Support for on-going efforts to develop the small and medium-size forest enterprise sector has good potential for expanding the capacity of forest residents to obtain a larger share of benefits from the forests in which they live. Aside from the livelihood benefits, this could have an ecological benefit by decreasing the need to clear land for agriculture.

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9.0 KENYA

9.1 FOREST ATTRIBUTES

9.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

According to the Kenya REDD+ Readiness Preparation Proposal (Kenya Forest Service, 2010), over 80 percent of the land area of Kenya consists of arid and semi-arid land where population density is low and livelihoods are based on livestock. Woody vegetation in those areas is sparse and consists of dry bush and open wooded grassland. Most of the rural population lives in the remaining 20 percent of land area where rainfall is higher and soils are better suited to agriculture. About 12 percent of Kenya's land area was originally covered in closed canopy forest but this has been progressively reduced by clearance for agriculture to the present level of about 1.7 percent. Much of the remaining closed canopy forest is protected, either as Forest Reserves managed by the Kenya Forest Service (KFS), as National Parks managed by the Kenya Wildlife Service (KWS), or as trust land forests managed by Local Authorities. In addition to the remaining closed canopy forests, there are approximately 107,000 hectares of industrial plantations under the management of KFS and an additional 90,000 hectares of private industrial plantations and local fuel wood plantations, mainly serving the tea industry.

Over the past three decades, large areas of forest reserves have been "de-gazetted" and officially converted to other uses, mainly agriculture, and the remaining protected indigenous forests managed by KFS and KWS have been degraded by decades of illegal logging of valuable timber trees (Kenya Forest Service, 2010: 25).

Indigenous forests, open woodlands and plantations together cover about 3.47 million hectares. Kenya loses about 12,000 hectares annually through deforestation, primarily through conversion of forests to agriculture or for public or private development projects. Policy-related drivers of deforestation include weak institutions, corruption, weak community participation, inadequate benefit sharing and unclear tenure rules governing access to forest resources, especially in trust lands, or areas held under customary tenure, which constitute about 80 percent of the land area of the country (Kenya Forest Service, 2010: 29.) The remaining forests are highly degraded due to unsustainable utilization, illegal logging, uncontrolled grazing and exploitation for charcoal. Deforestation and degradation are evident in both the high elevation water catchment forests areas (popularly referred to as water towers) and in bush land in the arid and semi-arid areas. The majority of Kenyans, including those living in urban and peri-urban areas, heavily depend on charcoal as a source of energy for cooking and heating.

9.1.2 CARBON STORAGE CHARACTERISTICS

Kenya's carbon stock is estimated to be 348 t CO_2/ha in above ground and below ground biomass. Annual forest-based CO_2 emissions are estimated to be 4,276,000 tons (Kenya Forest Service, 2010).

9.1.3 REDD+ PLANNING AND ACTIVITIES

Kenya submitted its draft REDD Readiness Proposal to the Forest Carbon Partnership Facility in October 2010. The plan fashions Kenya's REDD strategy around four priority areas: reducing pressure to clear forests for agricultural and other uses; promoting sustainable utilization of forests; improving forest law enforcement and governance; and enhancement of carbon stocks.

The 2010 draft proposal emphasized the forest sector reforms adopted by Kenya since 2005, particularly the new Forest Act adopted that year (see section 2.1 below), and considers the reforms broadly conducive to

achievement of REDD+ goals. Among the elements of the new policy and legislative framework considered most promising and meriting donor support are: a greatly enhanced role for communities in forest management through establishment of Community Forest Associations (CFAs); a focus on livelihoods and sharing of forest benefits more equitably; new incentives to promote sustainable use of forests including payments for ecosystem services; a focus on professionalism and adoption of an ecosystems approach to forest management throughout the Forest Service; and the imposition of higher planning and legal requirements for the de-gazetting of forest reserves (An Act of Parliament is now required to de-gazette individual forest reserves). The proposal also endorses Kenya's goal of increasing national forest cover to 10 percent of the country's land area from the current 2 percent, and endorses the goals of promoting commercial forestry and encouraging higher levels of forest cover on individual farms.

There are a small number of pilot projects focused on forest rights devolution, notably a project in the Mau forest area that seeks to assign clearer land and forest rights to indigenous claimants by piloting aspects of the National Land Policy and improving livelihoods (USAID/Kenya, 2011).

9.2 POLICY ATTRIBUTES

9.2.1 POLICY CONTEXT

Kenya has been considering reforms of the forestry sector for the last two decades, driven in considerable degree by criticisms by domestic NGOs and grassroots advocacy campaigns (perhaps best exemplified by the Green Belt Movement (GBM) led by Wangari Maathai) and by international organizations of the government's failure to address high rates of deforestation and forest degradation nationally. Reform of Kenya's forest sector has been closely linked with efforts to create a new national land policy that would address a wide array of problems related to land tenure insecurity, corruption in land dealings, inter-communal conflicts aggravated by competition for land and exploitation by politicians of land-related grievances, and other problems. A new National Land Policy (NLP) was endorsed by Kenya's parliament in 2009 and has statutory status. Many of its key provisions were taken up in Kenya's new constitution, which came into force in August 2010. The NLP gives equal statutory recognition to three forms of tenure—public, private and community—putting customary (community) tenure on equal legal par with public and private tenure for the first time since Kenya's independence in 1962.

Importantly, the NLP addresses resource tenure rights in considerable detail, and mandates a number of reforms that would extend a greater share of rights to resources used collectively—including fisheries, grazing and forests—to communities. For instance, sub-section 96 (j) of the policy provides that the "Government shall recognize and protect the rights of forest, water dependent or other natural resources dependent communities and facilitate their access, co-management and derivation of benefits from the resources." The NLP further requires that the Government of Kenya "make mandatory benefit-sharing where land based resources of communities and individuals are managed by national authorities for posterity" (sub-section 100 (c)). These provisions of the NLP represent a significant departure from past policy, which had vested nearly all rights to natural resources occurring on public land in the state. However, these policy reforms must be translated into re-writing of all acts pertaining to land – a process that promises to be controversial.

9.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Kenya has a relatively weak governance system as indicated by its Worldwide Governance Indicator scores (see Table 9.1), all of which are negative. Most troubling is its low score for political stability, which has declined since 2002. Kenya also has low scores for rule of law and control of corruption, which suggest the need for much stronger accountability measures for public officials than are currently in place. Kenya has a score of 2.1 on Transparency International's (2010) corruption perceptions index which further suggests that corruption is problematic. On the positive side, its scores for voice and accountability, government effectiveness, and regulatory quality increased between 2002 and 2009.

TABLE 9.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

(-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	-0.30	-0.71	+
Political Stability	-1.42	-1.27	-
Government Effectiveness	-0.58	-0.70	+
Regulatory Quality	-0.18	-0.20	+
Rule of Law	-1.06	-0.85	-
Control of Corruption	-1.05	-0.99	-
Corruption perceptions index score = 2.1 (Rank 154 of 178) (Transparency International 2010)			

9.3 TENURE ATTRIBUTES

9.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

The Forest Act (2005) anticipated many of the provisions for community management of natural resources and the devolution of resource rights mandated by the NLP and the Constitution. The Forest Act (2005) came into full legal effect in 2007 (although the new forest policy is still in draft form.) The principal features of the revised policy and of the Act are: a new institution, the Forest Service, to replace the Forest Department; enhanced civil society participation and partnerships in forest management; new benefit sharing arrangements; and a new recognition of the important roles forests play in local livelihoods and sustainable development.

Part IV, Community Participation, sections 46-49, of the Forest Act (2005) provides for the establishment of Community Forest Associations (CFAs). Once a CFA is legally registered as a local organization under the Societies Act, it develops a management plan for the use, management and conservation of forests within its designated forest area. The management plan can specify a number of uses, including customary uses (e.g., the collection of medicinal herbs, harvesting of honey, grass harvesting and grazing, and harvesting of timber or fuel wood) as well as uses based on forest-based enterprises capable of generating cash revenues for the community (e.g., ecotourism projects in partnership outside companies, plantation forestry, and "development of community wood and non-wood forest based industries"). (Section 47 (2) provides a list of permitted activities.)

In 2009 the Minister of Forestry and Wildlife issued regulations setting out procedures for establishing Community Forest Associations. To date, about 350 CFAs have been established under the Societies Act and about 50 management plans have been approved. Approval of plans has been slow. Management activities apart from customary uses are presumably not able to go forward while the plan is under review by the Forest Service. Many plans have now been waiting approval for several months, raising the danger that CFAs might become dysfunctional while their plans await approval. There is little evidence yet about the performance of CFAs, including as to whether the agreed management activities are generating meaningful conservation and financial benefits for communities.

Clearly, the CFA model is a promising one, and there is evidence that some CFAs are proving to be effective management organizations, including CFAs at Kakamega and Arabuko and Sokoke (Koech et al., 2009). A Green Belt Movement project in Mt. Kenya has helped a local community form a CFA. The GBM and the CFA have negotiated a benefit sharing agreement for eventual distribution of carbon credits with the Forest Service. Under the agreement, the Green Belt Movement would receive 20 percent of revenue and the CFA 80 percent (Mesiku 2011). CFAs are represented in policy forums by a National Association of Community Forest Associations (NACOFA).

Early research assessing the performance of CFAs (most of which had been established under precursor donor-funded Participatory Forest Management programs) raises a number of concerns about the confidence

communities have in their ability to manage internal conflict about management protocols and rule enforcement. The research also points out significant differences between the Forest Service and communities over the priorities they accord to the goals of CFAs. While the Forest Service sees conservation as the priority goal for CFAs, for communities the goal of getting increased access to forest resources is paramount. "It was clear [from interviews] that the motivation of most members of forest associations was the opportunity to utilize forest resources without the existing Government restrictions and only a few had perceived conservation as a priority" (Koech et al., 2009: 7).

The Forest Act (2005) appears to stipulate that CFAs can only be established within state forests or local authority forests (Section 46 (2)). The new constitution makes provision for establishment of new local government entities, District Councils. The powers, procedures for election of Council members, administrative structures, fiscal and tax powers, and other aspects of District Councils are still under development.

9.3.2 TENURE SECURITY

Section 21 of the Forest Act vests the ownership of all forests in Kenya other than private and local authority forests in the state. However, and importantly, Section 22 of the Act states that state ownership does not "prevent any member of a forest community from using, subject to such conditions as may be prescribed, such forest produce as it has been the custom of that community to take from such forest otherwise than for the purpose of sale."

9.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Section 46 (2) of the Forest Act (2005) grants Community Forest Associations (CFAs) a broad array of forest use rights, which must be specified in the CFAs approved management plan and formally described in an agreement between the Director of the Forest Service and the association. Use rights range from local consumption of firewood and non-timber forest products to establishment of commercial plantations and ecotourism enterprises in partnership with outside investors. (Government of Kenya 2005: 40)

The new National Land Policy provides for conversion of tribal trust lands (which cover about 80 percent of Kenya) to Community Land, having equal statutory status to land held in the other two land categories mandated under the Policy, Private Land and Public Land. Section 66 (d) (i) of the NLP provides that the Government enact a Land Act, that "provides for the recognition, protection and registration of community rights to land and *land based resources* taking into account multiple interests of all land users, including women." (Government of Kenya, 2009: 15). The new Land Act was enacted in May 2012, and includes a provision for the registration of community lands. Kenya's Constitution requires that the substantive provisions as to how community land will be administered and managed be enacted by 2015. Presumably, the enabling provisioins of the 2012 Land Act will define the extent to which communities would enjoy exclusive rights to forests, grazing and other land based resources.

9.4 USER GROUP ATTRIBUTES

9.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

About 70% of Kenya's 38.5 million people rely on wood or charcoal for cooking or heat (Mathu, 2007). Tea, fish, and tobacco companies also depend heavily upon wood for processing their products. The artisanal wood carving industry for the tourist trade is also quite important, providing income to more than 300,000 Kenyans. Other important forest products include bamboo for tea-harvesting baskets, honey, gums, resins, fruits, and medicinal herbs. Forests are also important for pasture and fodder for livestock, particularly during times of drought. A portion of Kenya's charcoal is exported to neighboring countries and the Middle East.

9.4.2 POWER RELATIONS

The Kenya Forest Service historically operated as a quasi-military organization, with an emphasis on enforcement rather than the provision of technical support for local forest management efforts (Geller et al., 2007). The forestry sector has also been identified as having high levels of corruption, and chronic conflicts exist between forest users and government officials (Geller et al., 2007). Kenya has an active environmental movement, including groups such as the Green Belt Movement, The National Council of Women, the Forests Action Network, the Kenya Association of Forest Users, and the Kenay Forests Working Group (Geller et al., 2007). The Green Belt Movement has been particularly important at empowering women through their leadership in efforts to reduce deforestation (USAID, n.d.)

9.4.3 BROADER SOCIETY INTERESTS IN FOREST CONSERVATION

Aside from their importance as a source of household and industrial products, Kenya's forests are considered crucial for watershed protection and the provision of water for hydroelectric power, human and livestock use, and agricultural irrigation (Geller et al., 2007). Kenya has more than 30 parks and wildlife reserves, many of them forested, and which support a rich variety of wildlife species including elephants, buffalo, leopards, forest antelope and several hundred species of birds (Geller et al., 2007). Forest and bushland wildlife are a major draw for the tourism industry, as well as being important for their biodiversity value. The Mau Forest Complex has been identified as a high priority for conservation efforst as it supports numerous endemic and threated species of flora and fauna, as well as being an important water catchment for human uses (USAID, n.d.).

9.5 ECONOMIC ATTRIBUTES

Although forest products and services comprise only about 1% of Kenya's gross domestic product, most Kenyan households depend upon them for fuel, construction materials, and a variety of other products. About 80% of Kenya's timber and 90% of its posts and poles are sourced from gazetted forests (Geller et al., 2007). The average country-wide estimated cost for forest carbon is US$15.17/ metric ton CO_2 (Deveny et al., 2009).Kenya has a Forest Carbon Index of 81 (Deveny et al., 2009); areas with high profit potential from generating large amounts of low-cost carbon are located in the central highland forests and along the coast. Strategies identified in Kenya's REDD-Readiness Proposal (Government of Kenya, 2010) for reducing deforestation and degradation include: reducing pressure to clear forests for agriculture by supporting more intensive farming practices, improving forest governance through building capacity within the Kenya Forest Service to carry out reforms and developing the capacity of CFAs to manage trustland areas, and promoting sustainable use of forests through implementation of benefit sharing arrangements and promotion of more efficient charcoal making technology.

9.6 OPPORTUNITIES FOR TENURE INVESTMENTS

A reform process that aims to devolve a greater share of user rights and management responsibilities to local communities has been underway in Kenya for several years, and across the key natural resource sectors, including forestry, wildlife conservation and marine resources. Community Forest Associations are provided for in the Forest Act (2005). CFAs grant communities use, exclusion and other rights to forest resources, subject to approval by the Forest Service of a management plan. However, the government retains ownership rights of the forests managed by CFAs, and can abrogate the agreement at any time. While useful legislation supportive of forest rights devolution is in place or under development, uneven and somewhat limited progress has been made in refitting and reorienting the work of resource agencies in ways sufficiently supportive of implementation of the new policy regime. Moreover, while the new National Land Policy is innovative, its effectiveness hinges on re-writing of the corpus of land law.

Tenure investments that could help remedy some of the weaknesses in Kenya's forest tenure system include the following.

- Support for restructuring Kenya's Forest Service from an agency focused primarily on law enforcement to an agency whose primary function is to provide leadership and technical guidance on forestry-related topics to local governments and communities. Such support would include developing a new vision and mission statement for the Kenya Forest Service, creation of new ministry-wide polices and incentives and reward structures, and providing Forest Service employees with training in skills more suitable to a technical support and policy guidance oriented agency.

- Support for legal reform that would solidify and expand the rights transferred to Community Forest Associations. A first step would be to support legal reforms that would provide a legislative rather than an administrative basis for community forest management, possibly modeled along the lines of Nepal's Community Forestry program, Botswana's community land trusts, or Namibia's community conservancies.

- Support for reconceptualization of the management plan requirements required by the 2005 Forest Act for community forest management. In the short term, this might involve establishing a dialogue between the Kenya Forest Service, Community Forest Associations, international donors, and local and international NGOs with the goal of developing a more flexible and less technocratic approach to the management plans required under the 2005 Forest Act. In the medium term, it might entail the design and implementation of experiments with creating community-friendly and culturally relevant forest management plans. The results of these experiments could then inform the forest management planning requirements included in national law and regulations.

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10.0 TANZANIA

10.1 FOREST ATTRIBUTES

10.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Tanzania is the second largest country in East and Southern Africa, with the mainland and coastal islands covering approximately 945,000 km² (Miles et al., 2009). 340,000 km² of that land area has more than 30 percent forest canopy cover. Around 50 percent of the country receives an annual precipitation of 760 mm, with the maximum of 2,540 mm near Lake Nyasa and the minimum of 510 mm on the Central Plateau.

It is estimated that as much as 90 percent of all forested land in Tanzania is miombo woodland, dominated by trees in the genera *Brachystegia*, *Julbernardia* and *Isoberlinia*. The miombo woodland ecozone stretches across 2.7 million km² of east and southern Africa, including large parts of Tanzania, Mozambique, Malawi, Zimbabwe, Mozambique, Zambia, Zimbabwe, Angola and southern Democratic Republic of Congo (Abdallah and Monela, 2007). The remainder of Tanzania's forest land is comprised of a mixture of seasonal coastal forests and thickets, mangroves, wet montane forests, wet lowland forests around Lake Victoria, and seasonal acacia savanna (Miles, et. al. 2009). The entire forest area of Tanzania is under some form of public ownership, with different use designations. Approximately 71 percent of the forested area is designated for production, and 29 percent for some form of protection: 6 percent for biodiversity conservation and 25 percent for multiple use (Devisscher, 2010). Most protection forests are located in areas with steep slopes that serve as water catchment areas and are prone to soil erosion if disturbed. Most significant for biodiversity conservation are the Eastern Arc mountains, a chain of volcanic mountains that stretches along the eastern side of the country from Kenya to Mozambique. The Eastern Arc mountains and coastal forests are regarded as one of the world's 25 global biodiversity hotspots (Meyers et al,. 2000).

According to the FAO Forest Resource Assessment (2010), the average annual rate of deforestation has increased over the past decades, from 1.02 percent between 1990 and 2000, 1.1 percent between 2000 and 2005, and 1.16 percent between 2005 and 2010. According to Blomley and Iddi (2009), the main direct causes of deforestation and forest degradation are clearing for agriculture, woodfuel extraction, charcoal making, wildfires and overgrazing. Illegal encroachment and charcoal production are believed to be more important causes of deforestation than illegal commercial logging (Tanzania Natural Resource Forum, 2009). Ahrends et al. (2010) found that forest degradation was particularly high near to the largest city in Tanzania, Dar es Salaam.

10.1.2 CARBON STORAGE CHARACTERISTICS

Total above-ground carbon density of Tanzania's forests is estimated to be 1,073 million metric tons and below ground is estimated to be about 332 million metric tons (Saatchi et al., 2011).

With a Forest Carbon Index score of 88, Tanzania is ranked 19th and thus is a member of the top 20 FCI scoring countries in the world. With respect to REDD quantity and cost projections, Tanzania is ranked 7th in the world and is expected to supply 2 percent of the supply of REDD credits. The average cost of credits generated from Tanzania is almost $13.84 per ton of CO_2 equivalent. The areas with potential to produce REDD credits at an opportunity cost of less than $20 per metric ton include the southeast coastal zone, Eastern Arc mountains, and the area to the south of Lake Victoria. These areas also have the highest FCI scores, and are thus the most attractive locations for investments in forest carbon projects.

10.1.3 REDD+ PLANNING AND ACTIVITIES

Tanzania has already progressed relatively far in REDD readiness planning. Tanzania is involved in UN-REDD and the Forest Carbon Partnership Facility and has established a National REDD Task Force and REDD Secretariat. Perhaps most importantly, the Government of Norway has singled out Tanzania for large support for planning and implementation of REDD. In 2008, the Prime Minister of Norway announced that his government had earmarked up to $US 100 million to support Tanzania on climate change, forest conservation and REDD over the 2009-2014 period. The Norway-Tanzania Climate Change Partnership has the following components: 1) Establishment of pilot activities of a national REDD process; 2) Policy review to reveal possible needs for improvement of the overall policy environment; 3) Research and methodology development for climate change adaptation and mitigation; 4) Training and educational programs relevant to the challenges of climate change; and 5) Partnerships with the private sector, NGOs and research institutions. In March 2009, a grant of $2.7 million was made to the REDD Secretariat to support the development of the national REDD strategy through research, capacity building, and strategic interventions. It is notable that participants in the National REDD initiative include the Tanzanian Meterologicial Agency, Sokoine University, the University of Dar es Salaam, and the Norwegian University of Life Sciences (http://www.reddtz.org/content/view/14/9/).

10.2 POLICY ATTRIBUTES

10.2.1 POLICY CONTEXT

Devolved management of forest resources is facilitated by the extent of devolved governance in Tanzania. As part of its socialist policies of the 1970s, the Government of Tanzania implemented villagisation, or Ujamaa. The Government passed legislation to create Village Assemblies and Village Councils, which are corporate bodies capable of owning property and entering into legal contracts. The original intent was to facilitate transmission of central development plans for collective agricultural production. Tanzania has used this historical legacy as a basis for subsequent legal developments, including the Local Government Act of 1982, the Village Land Act of 1999 and the Forest Act of 2002 (Blomley and Iddi, 2009). Implementation of the Forest Act and Village Land Act continues to be a challenge, with skewed interpretation by some government officials undermining the authority of village institutions (Rantala, 2011).

10.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Tanzania has negative scores for most of the Worldwide Governance Indicators, but its scores for four of the six indicators increased between 2002 and 2009 (see Table 10.1). The two indicators that declined during that period (government effectiveness and rule of law) also have the lowest scores. Tanzania ranks 100 out of 178 countries on the corruption perceptions index, indicating that while corruption is problematic, it is less so than in many African countries.

TABLE 10.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

(-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	-0.12	-0.35	+
Political Stability	0.06	-0.37	+
Government Effectiveness	-0.51	-0.35	-
Regulatory Quality	-0.46	-0.56	+
Rule of Law	-0.50	-0.44	-
Control of Corruption	-0.42	-0.95	+
Corruption perceptions index score = 3.0 (Rank 100 of 178) (Transparency International 2010)			

Brockington (2007) identifies corruption of local government as potentially having a negative impact on the success of community-based forest conservation efrots in Tanzania, but also notes that effects of corruption have not been well-documented.

10.3 TENURE ATTRIBUTES

10.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

Tanzania was one of the first countries in Africa to formally recognize the role of communities in managing and owning forests. This was done through the enactment of the Forest Act in 2002, which provides the basis in law for communities to own, manage, or co-manage forests under a range of conditions and management arrangements. The Forest Act is notable in embracing the principle of subsidiarity, stating its aim as "to delegate responsibility for the management of forest resources to the lowest possible level of local management consistent with the furtherance of national policies" (URT, 2002).

Decentralized forest management in Tanzania is termed Participatory Forest Management and can be grouped into two types: Community Based Forest Management (CBFM) and Joint Forest Management (JFM). As of 2008, Participatory Forest Management was being established or was operational in over 2300 villages (of a total of 10,571 registered villages) and covering over 40,000 km^2 in all parts of the country (Kilahama 2009). Most CBFM is on forest areas designated for production in the miombo woodlands, acacia woodlands and coastal forests. Joint Forest Management arrangements are mostly located in protection forests for montane evergreen forest areas (Blomley and Iddi, 2009).

CBFM has involved a greater degree of devolution of rights; has covered a greater area, greater diversity of forest and woodland types, and more villages; and has proven more successful so far than JFM. In CBFM, rights are extensive including management and use. One reason why JFM has been less successful is that the law is silent on how the benefits of forest management should be shared. In some cases, local management is occurring with vague promises of benefit sharing in the future (Blomley and Iddi ,2009).

A constraint on the effectiveness of CBFM and JFM is the overlap between the National Forest Policy and the National Wildlife Policy regarding ownership, management and benefit-sharing of natural resources. While Community-Based Forest Management relies upon the authority of village councils, the National Wildlife Policy requires the creation of new community institutions with new membership and boundaries. Village governments would have more incentive to engage in natural resource management if they had legal rights to flows of both wildlife and forest resources (Blomley and Iddi, 2009). Box 10.1 provides details on how CBFM on a Village Land Forest Reserve in the area around Dodoma has improved livelihoods and ecological conditions for the village of Mfyone.

Box 10.1: Mfyone Village, Miombo woodland in the southern highlands

Mfyome is located in Tanzania's relatively flat southern highlands and nestled in the dry miombo woodland forests that surround Dodoma. Mfyome consists of 515 households and its primary economic activity is smallholder agriculture. Other than agricultural plots, residents' primary resources are accessed from two miombo woodland forested areas that are approximately equal in size (60 km^2) and equi-distant to the center of the village: an open-access forest and the Village Land Forest Reserve (VLFR). The villagers of Mfyome use the miombo woodland for a large number of purposes, and it constitutes the main source of cash income for households in the lower income spectrum. The forest commons is used for firewood for subsistence for 70 percent of Mfyome's households. The main commercial forest uses are production of timber, charcoal, and firewood (direct sale, tobacco curing, and brick making), which are sold to traders 24 km away in Iringa. Other important uses are beekeeping and grazing, and supplying a number of subsistence products including firewood, construction materials, wild foods, and medicinal plants. More broadly, the forest is valued for its contribution to local livelihoods through its multitude of ecological services and as a safety-net in periods of hardship.

Between 1964 and 2003, the area was managed as a National Forest Reserve. The village had few rights to the trees in their village land area, and outsiders could obtain licenses from the district to harvest without the consent of village councils (Lund and Treue 2008). Decentralized forest management was introduced through DANIDA-funded projects over the period 1998–2003 with the goals of improving forest conservation, livelihoods/equity and governance. Mfyome, along with 22 other villages, received support to initiate awareness campaigns, delineate and demarcate its village land and VLFR boundaries, and formulate and jump-start a VLFR management plan. While delineating the VLFR, a woodland commons where the majority of villagers gather firewood was maintained.The VLFR was managed by an elected village forest committee. Measures were taken to secure resource sustainability (patrols, controls over traders, harvesting quotas, and taxation of forest uses), enhance the value of the forest (use-specific ban on harvesting timber species), and promote good governance. Governance has focused on transparency and downwards accountability in terms of management of forest revenue.

Mfyome has seen improvement in all three of its devolution goals (Lund and Treue, 2008). However, the outcome for equity is ambiguous, suggesting the need for adjustments to the devolution process, and continued monitoring to maintain protection, governance and livelihood improvements. In terms of forest conservation, the level of forest product extraction--particularly of the primary deforestation threats of charcoal production and extraction of firewood for tobacco curing and the market in Iringa town--seems to be within the limits of re-growth and, more importantly, the control of forest utilization has increased following the decentralization. The ability and interest of local management to conserve the VLFR is shown by the management approaches used to secure resource sustainability and enhance the value of the forest, even in this time of massive market demand for forest products.

Local livelihoods in general have improved with devolution. The village's exclusive rights to the resource, the improved bargaining position *vis-a´-vis* traders in forest products, and the public services financed through locally-collected forest taxes mediate some of the adverse livelihood effects of devolution (added entry barriers, restrictions, and costs of producing commercial forest products). However, there have been overall ambiguous or even negative effects of devolution for the poorer, most forest dependent households. Livelihood-specific mediation options include possible amendments to the Tanzanian 2002 Forest Act to include safeguards of minimum equitable benefit-sharing standards or other criteria to minimize tensions within the resource-sharing community. The interests of minorities or marginalized community members could also be protected through mandatory requirements of plan revisions every three to five years where community groups or individuals (other than forest authorities) hold formal rights to influence the plan before it can take effect for a new period.

10.3.2 TENURE SECURITY

Box 10.2 provides a comparison of JFM and CBFM in the Eastern Arc Mountains. Under CBFM, communities have secure expectations of long-term rights to village forest reserves. Rights include the right to bequeath. In JFM, secure rights exist for transfer and exclusion, but are short term and restricted in terms of use and control, with use being limited to subsistence (Blomley and Iddi 2009, Katila 2008). In the majority of the country where participatory forest management has not yet been implemented, however, the de facto situation is that forests and woodlands continue to be managed by raditional practices, involving institutional frameworks that are not formally recognized by the government (Blomley and Iddi 2009). This includes areas that are internationally recognized as success stories of effective forest regeneration, such as the ngitili reserve system practiced by the Sukuma people in the Shinyanga area south of Lake Victoria.

Box 10.2: Comparison of JFM and CBFM in the Eastern Arc Mountains

Vyamana (2009) offers a comparison of the two types of participatory forest management (PFM) in Tanzania—Joint Forest Management (JFM) and Community Based Forest Management (CBFM)--in the context of the high value montane forest of the Eastern Arc Mountains and contrasts this situation with that of CBFM in the context of the relatively low value miombo woodland forest of the Southern Highlands.

PFM was found to provide a new, though small, source of community-level income that was used to improve the physical capital of the affected communities. PFM also improved the benefit flows obtained from the forest resources compared to the non-PFM situation. However, in their current form, neither JFM nor CBFM supported an equitable distribution of the benefits and costs of devolved forest conservation and management. Technical and administrative obstacles prevented the poorest from taking full advantage of the benefits of forests under CBFM, while benefits from JFM-related income-generating activities were captured by village elites. Overall the results suggest that PFM implementation in Tanzania is improving forest conservation but not realizing its potential to contribute to reducing poverty and social exclusion and, in the case of CBFM, may even be increasing the gap between rich and poor.

Current administrative arrangements appear to exclude the poor from realizing the full suite of benefits that could be offered by PFM. Where the implementation of PFM (both JFM and CBFM) is accompanied by income-generating activities, it has had the effect of unintentionally excluding the poor, who cannot afford the initial investment costs for participation in these activities. Similarly, the current requirements for pre-paid permits for commercial harvesting in CBFM forests create obstacles to the poor, limiting their ability to access income-generating opportunities that could be availed from access to the forest.

PFM in a degraded forest does not benefit community members in the short-term as benefits are not realized until the forest has regenerated sufficiently to allow for sustainable timber off-take. In the short term, communities must shoulder management costs on the expectation of future benefits. The situation is different for PFM, particularly CBFM, in good condition forest such as in Myfome village's CBFM in the southern highlands, as incomes generated are used to cover management costs, making it more likely that community members will see a direct benefit for costs (such as labor/time) which they must bear.

PFM can have spill-over effects on nearby non-PFM forests. In the case of JFM, this study suggests that nearby non-JFM forests tends to become degraded once JFM restrictions are in place implying a leakage of degradation effects to non-JFM forests. On the other hand, there appears to be a positive spillover from CBFM forests, as communities tend to apply the rules and regulations of CBFM to all forest patches within their vicinity. Future efforts to conserve forest resources might want to reflect on this, and prioritize the expansion of CBFM coverage instead of JFM or ensure that both forms of PFM are implemented in a manner that encourages broader (landscape) management of natural resources.

10.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

According to the Forest Act of 2002, villages that have implemented Community-Based Forest Management must rely on the power of the Village Council to enforce their rights. Actual enforcement thus depends upon the effectiveness and legitimacy of the Village Councils. The enforcement situation is less clear in JFM areas and for woodlands in the remaining public lands.

10.4 USER GROUP ATTRIBUTES

10.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

When the last census was conducted in 2002, Tanzania had a population of 34 million people and the population growth rate was 2.8 percent per annum. Over 80 percent of all Tanzanians and 87 percent of the poor live in rural areas, where they depend on agriculture and natural resources for their livelihoods. In 2006, agriculture contributed about 45-50 percent of Gross Domestic Product, while gold extraction accounted for 3 percent of GDP, but 60 percent of total exports. It is estimated that forest resources made up about 20.1 percent of gross domestic product, equal to $2.2 billion. Almost all Tanzanian nationals have access to forest goods and services. Forests provide Tanzania with about 90 percent of its fuel, 75 percent of its building materials, 100 percent of its traditional medicines, and large amounts of its pasture. Overall, the forestry sector contributes about 3 million person years of employment every year. Intercropping of trees and crops is practiced on most forest plantations (Miles et al., 2009). Recent studies have shown that forest resources play a more important role as sources of cash income for poor households than for middle-income and relatively wealthy households (Blomley and Iddi, 2009).

10.4.2 POWER RELATIONS

Concern is expressed about the lack of power of rural community residents compared to national elites and international investors. The charcoal trade is particularly problematic. Most charcoal is produced and traded illegally, with marketing systems dominated by a small number of powerful elites and central and district governments (Milledge et al., 2007; Rantala, 2011).

Recently, a great deal of concern has been expressed about 'land grabbing' by local entrepreneurs and foreign businesses that see Tanzania as a source of cheap farmland for producing food and biofuels. In the last few years the governments of Korea, Saudi Arabia, Jordan, Turkey and China have all shown interest in developing large amounts of land under lease arrangements. The Korea Rural Community Corporation recently acquired 1,000 km^2 of land in the coastal region for paddy production, and a total of 20 companies have been allocated 6,411 km^2 of land for biofuel production. The government of Saudi Arabia alone is interested in leasing 5,000 km^2. There is concern that the Tanzania Investment Corporation has been promoting these investments without due consideration for the consequences (Sulle, 2010).

10.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

Among the international conservation community, interest in Tanzania's forest resources focuses particularly on the biodiversity value of the Eastern Arc mountain range and other montane forests. Designation of the Eastern Arc as a global biodiversity hotspot solidified that interest. The Eastern Arc Conservation Trust Fund was created as a center point for conservation of the Eastern Arc through a grant from the Global Environmental Facility. Interest in some montane forests is particularly strong due to their watershed protection value. The Critical Ecosystem Partnership Fund provides finance for projects that enhance the role of civil society in biodiversity conservation in the area. The Wildlife Trade Monitoring Network, TRAFFIC, is particularly concerned with the effects of devolution of forest governance.

10.5 ECONOMIC ATTRIBUTES

The most complete analysis of the financial incentives for forest conservation in Tanzania is the global analysis that Deveny et al. (2009) conducted for the Forest Carbon Index project of Resources for the Future. Deveny et al. (2009) calculate "profit potential" by country and for every square kilometer of the world's terrestrial area that has potential to grow forests. "Profit potential" depends upon the opportunity cost of land and the biological potential of the land to produce or store carbon. The product of "profit potential" and "risk" is the Forest Carbon Index. Deveny et al. (2009) estimate the average opportunity cost of land in Tanzania is in the range of $US 200-600 per hectare. Opportunity costs of land in Tanzania appear to be highest in the Tanga area on the Atlantic Ocean coast and on the south side of Lake Victoria, while the southeast coastal area of Tanzania has the lowest opportunity costs of REDD emissions in Tanzania. The southeast coastal zone, Eastern Arc mountains, and area to the south of Lake Victoria all have potential to produce REDD at an opportunity cost of less than $20/metric ton.

Within the Eastern Arc, the East Usambaras and the Uluguru mountains also have high value as the watersheds for the rivers that provide water supplies to the cities of Tanga and Dar es Salaam. Two related projects, Valuing the Arc and the Natural Capital Project, are currently conducting a series of research projects on the value of ecosystem services produced by Eastern Arc mountain region. The project was completed in March 2012, but as of June 2012, the final results had not yet been published on the project website (www.valuingthearc.org).

10.6 OPPORTUNITIES FOR TENURE INVESTMENTS

Overall, it appears that Tanzania represents both possibility and challenge regarding devolved forest management. In terms of possibility, Tanzania's local government and forestry laws create the real possibility of devolved forest governance in the country, particularly through Community Based Forest Management. Additional resources made possible through REDD could enhance the capacity of the relevant institutions, motivate more appropriate and transparent policy changes, and provide additional incentive for individual households and local communities to invest in tree planting and conserve existing tree and forest resources. The incentive to conserve forest land might offset new incentives for re-allocation of land to foreign investors in biofuels and food crops.

On the other hand, the additional resources made available through REDD may be mis-understood, mis-used, and mis-appropriated. Central agencies may be loath to cede real power to local authorities and local government officials may use their differential knowledge to the disadvantage of local farmers and forest groups. Appropriate investment of institutional support could make the difference.

Devolved forest management in Tanzania continues to be very well supported by international donors. Perhaps most active have been the bilateral development assistance agencies of Sweden, Finland, Denmark, Norway and the World Bank. Since 2003, most of these donors have committed to harmonizing the delivery of development assistance in the forest sector, which has helped to mainstream the practice of participatory forest management throughout the country (Blomley and Iddi, 2009). Increased investment in REDD readiness and demonstration activities by Norway, UN-REDD, FCPF and others will make donor coordination even more important.

Some areas that deserve additional investment include the following:

- Enhance and support the capacity of local forest officers and village forest committees in forest governance, including skills in technical aspects of forest assessment and forest management, carbon stock assessment, transparent financial management, internal conflict resolution, and negotiation with external agencies and companies.

- Development and support to decentralized REDD strategies that address management of village forest reserves, conservation and planting of trees on farm, and in services and infrastructure to promote alternative income sources.

- Better dialog and harmonization of policy approaches to foreign investment, agricultural development, devolved wildlife management, and forest management.

- Systematic analysis of the strengths and weaknesses of traditional forest management systems, as well as the overlaps and contradictions between customary systems and the village council structure.

- Creation and support of institutions that can effectively manage REDD funds. The low governance scores reported for control of corruption and regulatory quality in Tanzania indicate that there is still considerable uncertainty about the effectiveness, accountability and transparency of organizations that could channel funds from international REDD mechanisms to actual land users. The Eastern Arc Conservation Trust Fund could perform a role at least in some parts of the country.

- Systematic analysis of the spillover effects of improved PFM, including the possibility of positive and negative leakage effects from the creation of JFM and VLFR mechanisms.

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11.0 ZAMBIA

11.1 FOREST ATTRIBUTES

11.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Zambia's forest covers 49 million hectares, or 67 percent of the country (FAO, 2010). Open miombo woodland, a tree-shrub-herb vegetation cover dominated by species of *Bracystegia, Julbenadia*, and *Isoberlinia*, is the dominant type of forest cover in Zambia (Mukosha and Siampale, 2008).

Zambia's deforestation rate was 0.33 percent per annum from 2005 to 2010, and remained unchanged from the previous five years (FAO, 2010). Primary direct drivers of deforestation and forest degradation include clearing for agricultural fields and settlements, charcoal production, firewood harvesting, and timber production (Bond et al. 2010, UN-REDD 2010). Fires in miombo woodlands also contribute significantly to greenhouse gas emissions (Chundama, 2009).

11.1.2 CARBON STORAGE CHARACTERISTICS

Zambia's Forest Carbon Index score ranges from low to moderately low in the southern and central regions to moderately high in the miombo woodlands in the north and northwest (Deveny et al., 2009). Its overall score is Moderately High. The country's forests store an estimated 2416 million metric tons of carbon in above ground forest biomass (49 metric tons per hectare) (FAO, 2010). Zambia ranks 7th among sub-Saharan African countries in its living forest biomass carbon (FAO, 2010).

11.1.3 REDD+ PLANNING AND ACTIVITIES

Zambia is a pilot country for the UN-REDD programme (UN-REDD, 2010). It began working with the programme in 2008 and its National Programme strategy was signed in September 2010. Zambia envisions undertaking "learn-by-doing" programs oriented toward providing alternative livelihoods based on NTFPs, supporting sustainable agriculture and land use practices, transitioning to alternative energy sources, and revision of its policies, strategies and legislation. Governance structures, land tenure systems, law enforcement, and rights of local communities are identified as candidates for reform in the National Programme.

11.2 POLICY ATTRIBUTES

11.2.1 POLICY CONTEXT

The notion of devolving governance over natural resources in Zambia dates back to the mid-1980s and 1990s, when sharing the state wildlife agency's revenues from the sale of commercial use rights with local communities was framed as the key to reducing wildlife poaching (Bond et al., 2010). The Luangwa Integrated Resource Development Project and the Research Project Administrative Management Design Program (ADMADE) for Game Management Areas (GMA) pioneered co-management models focused on revenue-sharing and granting limited rights and management powers to local communities over wildlife (Gibson and Marks, 1995; Dalal-Clayton and Child, 2003).

Based on lessons learned from these two efforts, in 1998, Zambia enacted theWildlife Act No. 12 which expanded community participation opportunities in game management and established local communities' rights to use and co-manage GMAs and Open Areas (i.e., areas not in protected or reserve status) (Bond et

al., 2010). Communities participate in wildlife co-management through elected bodies known as Community Resource Boards (CRBs), which include elected representatives from Village Action Groups (Nyirenda, 2011). Village Action Groups are composed of elected members of the villages in or around a GMA.

There are 73 CRBs and of Zambia's 35 GMAs, all but three have active co-management processes in place. The revenues generated through the sale of hunting licenses and concessions are shared among the Community Resources Boards, traditional leaders, and the Zambian Wildlife Authority. A large percentage of the Zambian territory is covered under GMAs. However, the GMA governance structure does not extend to forest resources other than wildlife.

Co-management was in principle extended to the forestry sector in 1999 after Zambia passed the Forest Act No. 7. This act included provisions for establishing Joint Forest Management Areas (JFMA) and the delegation of management powers to local communities through Joint Forest Management Committees (JFMC) (Republic of Zambia, 1999a). However, in practice the Forestry Commission that was meant to replace the Forestry Department has yet to be created and implementing measures for the new Forest Act have not yet been put into place (USAID, n.d.).

With substantial external donor assistance, in the early 2000s the Zambian government initiated several pilot joint forest management projects under the authority of Statutory Instrument No. 52 of 1999 on Local Forests. This instrument permits the Minister of Tourism, Environment and Natural Resources (MTENR) to declare any Local Forest to be a Joint Forest Management Area (Republic of Zambia, 1999b). Through this instrument, and through Statutory Instrument No. 47 of 2006 on Local Forests, the Provincial Forestry Action Programme supported 8 pilot JFMAs in four Provinces (Republic of Zambia, 2006). However, Local Forests make up only 2.8 percent of Zambia's forested area (Chundama, 2009), and the pilot projects have now expired with no expectation that they will be replaced.

Zambia's efforts to devolve forest governance have been limited to these small-scale pilot projects in large part because the government has lacked the political will to enact the enabling legislation that would make more widespread application of JFM possible. As a result, the majority of Zambia's forest resources (except wildlife, which falls under Wildlife Act No. 12 as noted above) are still governed under the provisions of the 1973 Forest Act and the 1998 Lands Act, in which all land and forest resources are vested in the State, but where customary use rights apply for non-commercial uses of forest resources (Chundama, 2009). Details of this system are described in Section 3, Tenure Attributes.

Zambia's 2002 Decentralization Policy provides for devolution of central government functions, including natural resource management, to the provincial and district levels. However, an implementing decree to establish the decentralized administrative entities has not yet been enacted (Nyirenda, 2011).

Although Zambia's 1995 Lands Act and 1999 Forest Act provide only weak rights for customary users, its 1991 Constitution recognizes individual property rights and protects individuals from unlawful takings. Thus a foundation exists for strengthening rights to land and resources. As a member of Southern African Development Community, Zambia has committed on paper to develop policies so that local people can benefit from forest resources and participate in their management; it also has committed to taking measures that would facilitate women's participation in forest management (Phiri, 2009). Zambia is also a signatory to a number of international conventions and framework documents, such as the Rio Declaration, Agenda 21, the UN Framework Convention on Climate Change, and the World Conservation Union's Principles and Guidelines that call for nation-states to recognize tenure systems of indigenous and traditional peoples within their boundaries (Phiri, 2009). Zambian traditional authorities have used these documents as leverage to argue – unsuccessfully thus far -- for the restoration of the traditional legal system, including ownership rights to land and natural resources (Mukanga, 2009).

11.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Although Zambia is a multi-party democracy, its overall governance system is relatively weak, as exemplified in its largely negative World Governance Indicator (WGI) (see Table 11.1) and low corruption perceptions index scores. Corruption and an ineffective government are particularly problematic. Politically Zambia is more stable than many African countries and it scores strongly on the strength of legal rights index. Most of its WGI scores have moved in a positive direction since 1996 when major policy reforms were just getting started, indicating that there is room for optimism that forest governance reforms may eventually be successful.

TABLE 11.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

Indicator (-2.5 to +2.5)	2009	2002	1996	Direction [2002– 2009]
Voice and accountability	-0.27	-0.40	-0.49	+
Political Stability	+0.51	+0.33	-0.50	+
Government Effectiveness	-0.67	-0.82	-0.67	+
Regulatory Quality	-0.45	-0.60	+0.29	+
Rule of Law	-0.48	-0.41	-0.49	- (barely)
Control of Corruption	-0.51	-0.95	-1.07	+
Corruption perceptions index score = 3; Rank 101 of 178 (Transparency International 2010).				

Zambia has a very poor record of including local communities in forest decision-making. Neither the 1973 Forest Act nor the 1999 Forest Act requires the Forest Department to consult with local communities when drafting forest regulations. A good example of this failure to engage forest users in forest management was the Forest Department's unilateral decision to steeply increase forest product license fees in 2003, a change that resulted in a sharp rise in unlicensed charcoal production (Bwalya 2007). At the same time, the Forest Department lacks the resources to carry out both enforcement and extension activities effectively (UN-REDD, 2010).

11.3 TENURE ATTRIBUTES

11.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

Governance of forest resources generally: The majority of forested land in Zambia falls under the following governance structure. The 1995 Land Act gives formal recognition to customary tenure through the categorization of the country's land as either State land or customary land. However, all land is vested in the President (on behalf of the Zambian people), greatly diluting the strength of rights to customary land. Persons who hold land under customary tenure systems have only use rights on the land rather than a right in the land itself. The 1973 Forest Act restricts those rights further by vesting ownership of trees and other forest products in the President (on behalf of the Zambian people), language which is retained in the 1999 Forest Act. The Forestry Department, which is part of the Ministry of Tourism, Environment and Natural Resources is charged with managing the nation's forests (Phiri, 2009).

Forested lands are divided into National Forests, Local Forests, and Open Areas. Both National and Local Forests are established through a formal gazetting process, and use rights to such areas are much more restricted than for Open Areas. Under the 1973 Forest Act (Republic of Zambia, 1973), customary rights holders can harvest most NTFPs for sale or subsistence use and clear land for farming in Open Areas, which constitute the majority of Zambia's forest land. However, they must obtain licenses to harvest "major forest products" (i.e., trees or woody parts of trees) whether for subsistence use or sale.

Customary land can be alienated to individuals within the formal legal system through conversion to a 99-year state leasehold subject to State approval. Once converted, all customary rights are extinguished. If customary

land is converted to a Local Forest, the process of establishing the Local Forest converts it to state leasehold and limits the rights of customary users to the use and management of NTFPs (Bwalya, 2007).

Governance of forest resources in JFMAs: In the few areas where Joint Forest Management was piloted, the forest governance structure was modeled after the Community Resource Board and Village Action Group system present in Game Management Areas. Management plans were to be developed by a Joint Forest Management Committee (JFMC), which included representatives elected from participating villages, as well as representatives from the Forestry Department, the Chiefs, the District Council, and, optionally, other stakeholders interested in forest management (Republic of Zambia, 2006).

The JFMAs were divided into Village Resource Management Areas. A Village Resource Management Committee (VRMC) was formed to carry out the JFMA management plan. The JFMC and VRMC were then registered as a Forest Trust. Through their elected representatives in the VRMCs and JFMCs, forest user groups in local communities (theoretically) enjoyed both management rights and use rights, but only with the Forestry Department's direct oversight and approval of the management plan. Rules of use, as well as who had the right to use the forest, were established through a management plan and subsequent Memorandum of Understanding (MOU) between the JFMC and Forest Department (Olson 2007). Once the MOU and management plan were approved and validated, the plan became legally binding. Community members who were deputized as Honorary Forest Officers were responsible for monitoring forest use (Bwalye, 2007). The Forestry Department also deputized the VRMCs to issue and collect fees for forest use licenses (Olson, 2007).

Establishing and maintaining a functioning JFMA was costly and time-consuming for local communities (Olson, 2007; Bwalye, 2007). Benefits to community members included (theoretically) legal access to forest goods, as well as the ecosystem services provided by a less degraded forest ecosystem (Olson 2007). However, these benefits were not always forthcoming (Bwalye, 2007). The JFMCs could also apply for loans from Zambia's Forest Development Credit Facility to invest in forestry sector improvements, such as beekeeping or pit sawing equipment and facilities (Olson, 2007). The 1999 Forest Act provides for a revenue sharing program similar to the one in the wildlife sector to support community involvement in managing JFMAs (Bwalye, 2007). However, as noted above, the chief blockage to forest governance devolution remains the lack of implementing measures for the 1999 Forest Act, as without such measures, the Zambian Forest Department lacks the legal guidance required to establish a revenue sharing system for the pilot JFMAs (Forbes and Karani, 2010).

The record for the JFMAs relative to livelihood contributions was dismal as they never put a revenue sharing system in place, and in some cases, the communities never had legal access or use rights to the forest (Bwalya, 2007). In areas where JFMAs were linked with assistance for agroforestry and NTFP value-added enterprises, community members experienced some financial and skills-building benefits, albeit small in scale (Olson, 2007). The environmental returns were also minimal as many of the JFM committees were never fully functional (Forbes and Karani, 2010). In the wildlife sector, Zambia's co-management approach has reduced poaching and increased wildlife numbers but it has been less successful at improving livelihoods (Bond et al., 2010). Although revenues for communities from GMAs have risen from $302,653 in 2002 to 1.4 million in 2009, the amounts per community are relatively small in comparison to the communities' needs (Nyirenda, 2011).

11.3.2 TENURE SECURITY

Tenure security in Joint Forest Management areas was low in part because the implementing regulations for the 1999 Forest Act have never been established. In Open Areas, which are not eligible to have JFMAs, tenure security is also weak as rules governing use rights to forests are subject to change by the Forestry Department with no formal requirement for consultation with local communities or traditional leaders. When there are conflicts between customary and formal statutary law, the latter takes precedence (Republic of Zambia, 1995). In recent years, tenure insecurity has increased with the rising demand for land for agrofuels (for example, *Jatropha curcas*), large-scale food production, and urban development, and subsequent requests of

the Ministry of Lands and traditional authorities to convert lands held under customary tenure to private state leaseholds (German et al., 2011). Such conversions require the consent of the traditional authority, but not the consent of customary use rights holders.

11.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Through the JFMC, communities had an indirect right to establish and enforce use rules for their JFMA with the proviso that they adhered to the provisions of the Forest Act (Bwalya, 2007). The JFMCs had the right to refuse to issue harvesting licenses to both members and non-members (Republic of Zambia, 2006). However, it is unclear whether JFMCs had the right to fine or arrest rule violators (Bwalya, 2007).

In Open Areas outside of JFMAs, traditional authorities regulate the use of forest products by local inhabitants. However, traditional authorities are legally powerless to control outsiders' harvesting and felling activities in these areas if the users have licenses issued by the Forest Department (Shitima, 2005). In both JFMAs and Open Areas, communities get minimal support from the Forestry Department, which has limited staff and other resources, to help enforce their use rights (Bwalye, 2007; Olson, 2007).

11.4 USER GROUP ATTRIBUTES

11.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

Forests under the pilot joint forest management (JFM) schemes provided both subsistence goods and income for user groups (Bwalya, 2004; Bwalya, 2007; Olson, 2007; Phiri 2009). Most members of Joint Forest Management Area (JFMA) communities made their livelihoods through a mix of farming and forestry activities. Forests are an important element of local farming systems, which rely heavily on the practice of chitemene, a form of slash and burn agriculture that temporarily enhances soil fertility (UN-REDD, 2010). Charcoal, timber, construction poles, and wild honey are harvested by men, whereas women are more likely to harvest wild foods, such as mushrooms, tubers, and berries.

11.4.2 POWER RELATIONS

Local communities in Zambia in JFMAs existed in a patron-client type of relationship with the local Forest Department officers, where the balance of power was heavily skewed in favor of the forestry agents (Bwalya, 2007; Olson, 2007; Phiri, 2009). Communities also existed in a dependency relationship with international donors and NGOs who heavily subsidized the start-up and operating costs of the JFMAs (Forbes and Karani 2010, Olson 2007, Phiri 2009). Power differences existed internally to JFMA communities, with women, younger adults, and less influential community members struggling to have a voice in decisions (Bwalya, 2007; Forbes and Karani 2010; Olson, 2007). Conflicts with other powerful forest stakeholders, such as agrofuel producers, charcoal traders, and peri-urban developers, are not mentioned in any of the case studies published on JFMAs (Bwalya, 2004; Bwalya, 2007; Olson, 2007; Phiri, 2009).

11.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

Zambia has historically received much external support for wildlife conservation, but donor support for forestry projects has been limited in the past decade in part because of the forestry department's resistance to reform measures. NGO support for forestry projects is limited as well, and there does not appear to be a strong network of forest stakeholders as exists in West Africa and the Congo Basin.

11.5 ECONOMIC ATTRIBUTES

The annual opportunity costs per hectare for three likely alternatives to forest retention (i.e., corn production, charcoal production, and timber production) are estimated at $260, $808, and $103.5 per year, respectively (Chundama, 2009). Likely viable sources of adequate economic returns from retaining forest cover include

expansion of value-added nontimber forest products (NTFP), carbon payments for adoption of agri-environmental practices, and enterprises related to wildlife tourism and hunting.

11.6 OPPORTUNITIES FOR TENURE INVESTMENTS

The core weakness in Zambia's JFM program and, indeed of its forest governance system in general, is the gross imbalance in the allocation of rights and responsibilities between the centralized government, traditional authorities, and communities. Bwalya (2004: 97) summed up the problem when she stated: "Before JFM, everything belonged to the government, and the government also managed the forest. But now, everything *still* belongs to the government but the communities have management responsibility." Given these dynamics, it is hardly surprising that the JFM initiative in Zambia failed to gain the popular support that it acquired in neighboring Tanzania where the imbalance in rights and responsibilities was much less marked.

Many JFM program evaluators attribute its failure to the lack of implementing regulations for the revenue-sharing provisions of the 1999 Forest Act. However, putting those regulations in place would not address Zambia's fundamental forest governance problem, namely the gross imbalance in rights, and therefore control, over land and forests that exists between the Forestry Department and local communities. Nor would it address the tenure insecurities brought about by land policies that actively encourage traditional chiefs to treat collective customary lands as individualized private property.

Instead, a viable tenure investment strategy in Zambia would have the following characteristics.

- Assistance would focus on supporting legislative reforms that restore more rights over land and forests to customary rights holders. The communal titles that are found in Latin America – minus the costly technical forest management plan requirements -- would likley serve as a better model than the benefit-sharing schemes that dominate forest governace devolution efforts in Africa.
- The focus of such reforms would be on expanding rights of access, use, management, and exclusion to the woodlands that lie outside of local forest reserves or other special use areas.
- Such reforms would need to be structured so as to recognize and safeguard the collective nature of those customary rights.

The Zambian government of the past decade has lacked the political will to move forward with such reforms. However, the recent change in the ruling regime (as reflected in the September 2011 elections) has opened up a possible window of opportunity for accomplishing substantive reforms in the forestry sector.

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12.0 INDIA

12.1 FOREST ATTRIBUTES

12.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

India's forest covers 68.4 million hectares, or 23 percent of the country's land area (FAO, 2010). The country's forests fall into 16 different ecosystem categories, ranging from tropical rainforest in the south to dry alpine forests at high elevations in the Himalayas. Major genera in the tropical wet evergreen forests include *Dipterocarpus*, *Hopea*, *Callophyllum*, and *Syzgium* (Blaser et al., 2011). *Tectonis grandis* (teak) and *Shorea robusta* (sal) dominate the tropical moist deciduous forests (Blaser et al., 2011).). Slightly more than half of India's forested land consists of tropical forest, the majority of which has more than 40 percent canopy coverage (Blaser et al., 2011). Primary forests cover only 23 percent of the country's forested area, while 62 percent consists of natural regeneration (FAO, 2010). The remaining 15 percent is covered with plantations, which are composed primarily of native species. The states with the largest area in forest cover are Madhya Pradesh (~ 76,000 hectares) and Arunachal Pradesh (~68,000 hectares) (Kishwan et al., 2007).

India's forested area grew at an annual rate of 0.21 percent between 2005 and 2010 (FAO, 2010). The increase in forest cover is due to widespread efforts to plant trees and woodlots. Yet, deforestation and forest degradation continue to occur in many areas of the country (Blaser et al., 2011). The majority of India's CO_2 emissions are linked to the energy sector; only 28 percent is due to agriculture and only 1 percent is linked to land cover changes (GOI, 2009). Much of India's forest land is heavily degraded through conversion to cropland or agroforestry systems, firewood cutting, nontimber forest product harvesting, logging, overgrazing, and wildfire (Blaser et al. 2011). India's demand for timber products currently exceeds the supply available internally by roughly 3 million cubic meters and it became a net importer of wood in 2003-2004 (GOI, 2009).The primary direct drivers of deforestation in India are logging, fuelwood harvesting, forest fires, and overgrazing. Primary indirect drivers of deforestation and forest degradation are population growth, poverty, rapid economic growth and weak forest governance (GOI, 2009).

12.1.2 CARBON STORAGE CHARACTERISTICS

India has a Moderately High Forest Carbon Index score, with most areas of high potential for returns on investments in carbon in the states of Andhra Pradesh and Orissa and along the western coast (Deveny et al., 2009). India's forests store an estimated 2800 million metric tons of carbon in above ground forest biomass (41 metric tons per hectare) (FAO, 2010). India's share of global $C0_2$ emissions is 5 percent, however, its per capita emissions rate is only one-twentieth that of the United States (GOI, 2009).

12.1.3 REDD+ PLANNING AND ACTIVITIES

India is not a participant in the Forest Carbon Partnership Facility or in the UN-REDD Programme. As part of its National Climate Change Action Plan, India has recently launched the "Green India Mission", which calls for restoring forests on 20 million hectares over the next 10 years (GOI, 2010). The goal is to sequester 50-60 million metric tons of CO_2 annually by 2020 (GOI 2010). The strategy emphasizes a holistic greening approach that focuses on environmental restoration as well as establishing plantations. Local communities would play a pivotal role, with the Gram Sabha envisioned as the primary institution for carrying out mission activities at the village-level. Joint Forest Management (JFM) Village Forest Protection Committees would become committees of the Gram Sabha which Sarin et al. (2003: 6) describe as "the body of all adult voters of a self-defined community." Community foresters, drawn primarily from scheduled tribes and other forest dwellers, would facilitate planning, implementation, and monitoring. India is taking steps to implement

REDD+ type projects. The State of Himachal Pradesh recently signed an agreement with World Bank for carbon credits linked to a Clean Development Mechanism project (Reforestation Project – Improving Livelihood and Watersheds) (Sommerauer, 2011). A project being implemented jointly by the Mawphlang tribe and Community Forestry International in Meghalaya is in line to be the first project in India to receive REDD+ financing (Radhakrishnan, 2011).

12.2 POLICY ATTRIBUTES

12.2.1 POLICY CONTEXT

India has long had a federal system of government with a relatively strong centralized government, but with considerable autonomy granted to the 29 states (Kishwan et al., 2007). In the forestry sector, the central government establishes the guiding legislative framework and exercises oversight control over forests, but the states are responsible for managing them and enforcing the rules (Blaser et al. 2011). The 73rd Amendment to the Constitution passed in 1992 required states to decentralize governance further by granting powers and responsibilities to local self-governance institutions known as Panchayati Raj Institutions (Sarin et al., 2003). Included in their functions are decision-making powers over common land, fuelwood plantations, and NTFPs (Sarin et al., 2003). The Gram Sabha is the entity through which the Panchayati Raj Institutions accomplish project planning and implementation (Sarin et al., 2003).

For most of the 20th century, India's forest management was strongly oriented toward timber production as a revenue generating and economic development strategy, often at the expense of rural livelihoods (Véron and Fehr, 2011). However, its 1988 National Forest Policy reframed forest management into a sustainable development strategy. The policy set a goal of placing 33 percent of India's area under forest cover, highlighted the importance of forests as sources of livelihood opportunities, and called for greater local participation in forest protection and management (Kishwan et al., 2007). The Joint Forest Management (JFM) Circular Order issued by the central government in 1990 created a legal avenue whereby villagers could enter into co-management agreements with state forest services to gain access and management rights over forest lands (Kishwan et al., 2007). Initially JFM was applied only on degraded forest lands, but has since been expanded to include healthy forests (Sarin et al., 2003). The 1996 Panchayat (Extension in Scheduled Areas) Act transferred some powers and responsibilities to forest communities, but the 2006 Forest Rights Act is much further reaching in that it recognizes ownership rights (albeit truncated) of tribals and other traditional forest dwellers. However, the state Forest Departments have resisted implementing the 2006 Act (Vedavathy, 2010), and significant contradictions exist between the recent laws and policies calling for community-based forest governance and other foundational laws affecting the use of forested lands and resources that emphasize state control.

12.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

India has a moderately weak governance structure (see Table 12.1). It is strongest in providing opportunities for political voice and accountability, but has a relatively high degree of political instability, and somewhat low regulatory quality. On the positive side, India's governance scores in all areas except political instability are on a modest upward trend. It also has a very strong legal rights index score, and a moderate corruption perceptions index score.

TABLE 12.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

Indicator (-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	+0.47	+0.38	+
Political Stability	-1.19	-0.87	-
Government Effectiveness	-0.01	-0.11	+
Regulatory Quality	-0.28	-0.33	+ (barely)
Rule of Law	+0.05	+0.04	+ (barely)
Control of Corruption	-0.33	-0.45	+
Corruption Perceptions Index = 3.3 (Rank = 87 of 178) (Transparency International 2010)			

12.3 TENURE ATTRIBUTES

12.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

India's 1927 Forest Act is the guiding legislation for managing the country's forests. The Act divides India's permanent forest estate into reserved, protected and unclassed forests (Blaser et al., 2011). In reserved forests all activities are forbidden unless explicitly permitted, while in protected forests all activities are allowed unless explicitly forbidden (Blaser et al., 2011). Unclassed forests are those that have not been formally declared either reserved or protected; their management rests with communities and private individuals rather than with the states. Of the area in India that is in forest cover, roughly 86 percent is estimated to be under central government ownership (and therefore under the management authority of the state governments); the remaining 14 percent is owned by private individuals, firms, or other corporate entities (Blaser et al., 2011). Joint Forest Management Agreements and claims filed under the 2006 Forest Rights Act are the two major avenues by which forest dwellers can acquire access to state forest lands and resources in India.

Joint forest management (JFM): The Joint Forest Management Circular issued by the central government in 1990 outlined the rights of local communities to use and manage forest lands. All of the states have since adopted JFM and approved guidelines for its implementation (Kishwan et al., 2007). The 1996 Panchayat (Extension to the Scheduled Areas) Act (PESA) strengthened and broadly institutionalized the implementation of JFM by devolving some powers over forest lands to tribal community villages and councils in Scheduled Areas (Kishwan et al., 2007).

As of 2007, more than 1 million JFM groups managed roughly 22 million hectares of forest land (Kishwan et al., 2007). The rights over forests granted through JFM agreements vary by state, but in general JFM groups have full rights to NTFPs except for those that are categorized as "nationalized" Minor Forest Products (i.e., tendu leaves, sal seeds, bamboo etc.). In all states, JFM groups receive a share of the revenues from timber harvested within the forest they manage; the percentage varies from state to state and ranges from as low as 20 percent to as high as 100 percent (Kishwan et al., 2007). JFM microplans must conform to silvicultural prescriptions of the Forest Department's working plan for that area. The legal organizational forms that JFM groups take, their autonomy and entitlements, and the types of land they can operate on also vary by state (Sarin et al., 2003). For example, in Orissa and Uttar Pradesh, JFM groups can acquire co-management rights over revenue lands, while in other states they are only allowed to manage degraded forests (Sarin et al., 2003).

A key feature of JFM is that implementation typically has involved restricting who can use forest lands and resources. Often this has entailed evicting "encroachers", e.g. people who have established subsistence plots or agroforestry cropping systems on protected forests. In the 1990s, this practice led to numerous incidents of armed conflict in Madhya Pradesh, a state where the Forestry Department had never had a strong presence, and where, in consequence, many members of scheduled tribes had continued to farm their customary holdings. A Joint Review Mission by World Bank and the Ministry of Environment and Forestry in 1999 found that JFM projects in the area typically did not include consultation with tribals. The projects' failure to acknowledge customary use rights threatened the livelihoods of tribal members, sparking violent

resistance. Other groups with limited political and economic power, such as women, lower castes, and landless laborers, also have had their livelihoods threatened by JFM decisions made without their input.

Forest Rights Act of 2006: The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 provides tenure security and access rights to members of scheduled tribes and traditional forest dwellers. Forest dwellers are defined as people who are presently primarily residing in forests or forest lands, dependent on those forests for their livelihoods, and who either have been residing in the area for 75 years or are a member of a Scheduled Tribe for which the area was set aside (GOI, 2006). The act recognizes both individual and collective ownership right claims. It also recognizes communal rights of ownership, although the rights enumerated as constituting "ownership" fall short of a full bundle of rights. The law recognizes customary rights of access to collect, use and dispose of nontimber forest products that traditionally have been gathered within or outside village boundaries. Additionally, it recognizes a community right to intellectual property and traditional knowledge. The central ministry responsible for implementing the 2006 Forest Rights Act is the Ministry of Tribal Affairs (Sarin and Springate-Baginsky, 2010).

Management rights, including the right to protect, regenerate, and conserve traditional community resources are recognized under the 2006 Forest Rights Act as well, but rights holders have a duty to manage such resources in a sustainable manner. Exclusion rights are vested in the Gram Sabha. The rights recognized under the 2006 Forest Rights Act are heritable, but cannot be alienated or transferred. The rights cannot be extinguished by the State except through consultation with and with written consent of the Gram Sabha and the preparation of alternatives and a resettlement package. The law also recognizes claims to traditional areas of use for pastoralist communities, including access to grazing and water bodies. Through an elected Village Forest Rights Committee, the broader-based Gram Sabha, rather than the more restricted decision body, the Gram Panchayat, recommends to the government who has valid rights claims.

Devolution outcomes and key lessons learned: Given India's size and biological and cultural diversity, the ecological and social outcomes of forest governance devolution efforts in India can be expected to vary widely. Data on forest quantity and quality gains attributable to JFM are limited and it is difficult to disentangle the effects of other contributing factors (Véron and Fehr, 2011). However, case studies show a general pattern in which modest ecological gains occur in areas where community forest governance systems are still operational (Agrawal et al,. 2005). In general, JFM has had a modest positive impact on rural residents in general, but specific marginalized groups, such as women, members of tribal groups, landless villagers, members of lower castes, and the less well-off typically derive fewer benefits (Agrawal et al., 2005; Balooni, 2002; Paul and Chakrabarti, 2010).

Perhaps the most important lesson to be derived from India's experience with forest governance devolution is that tenuous use rights and weak benefit sharing models only go so far toward providing the security and financial incentives to invest in forest improvements and protection at landscape-scales. In India's case, forest dwellers who have acquired de jure recognition of the customary ownership rights to forest lands under the 2006 Forest Rights Act are now much more able to push successfully back against Forestry Department attempts to illegally demand licenses, cash bribes, or labor in return for granting access to forest resources. They are also now in a stronger position to resist efforts by other powerful entities, such as mining companies, to acquire forested lands that lie within their customary use zones.

A second important lesson from India's experiences is that rights alone are not enough, particularly when state agencies are likely to ignore or actively seek to undermine those rights. Although implementation of ownership claims under the 2006 Forest Rights Act has been slow, the existence of a new ministry dedicated specifically to ensuring that customary rights claims receive a fair hearing has helped keep the process from grinding to a halt.

12.3.2 TENURE SECURITY

Customary rights to state forest land in India remain embroiled in controversy since many areas were declared protected or reserved forests without recording or inadequately recording who lived there and what their

rights were (Kishwan, 2007; Sarin, 2003). Controversies also arise even where the law is quite explicit about customary use rights. For example, the 2006 Forest Rights Act explicitly includes bamboo among nontimber forest products use rights, yet many state forestry officials continue to require villagers to develop management plans and obtain licenses to harvest bamboo (Narain, 2010). To add to the confusion, both state-level JFM guidelines and the 2006 Forest Rights Act have provisions that are contradictory to other forest-related laws, such as the 1927 Indian Forest Act, the 1972 Wildlife Protection Act, and the 1980 Forest Conservation Act (Sarin et al., 2003; Véron and Fehr, 2011). In some areas, villagers have formed forest village federations to enhance their ability to mount non-violent protests and hold forestry officials accountable to the law (Sarin et al., 2003).

12.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

JFM committees (established under JFM guidelines) and Village Forest Committees (established under the 2006 Forest Act) possess exclusion rights but those rights can be difficult to enforce. Sarin et al. (2003) found that corrupt Forest Departments in Orissa, Madhya Pradesh, and Uttarakand, undermined village efforts to enforce harvesting and encroachment rules by granting use rights over JFM lands to economically more powerful users. Although the 2006 Forest Rights Act provides a strong legal basis for tribals and other traditional forest dwellers to exercise exclusion rights, in practice those rights remain precarious due to foot-dragging in implementation on the part of the state forestry services (Sarin and Springate-Baginsky 2010) and the forest dwellers' weak economic and political position relative to outsiders, such as irrigation companies, mining concerns, and real estate developers (Alam, 2011; Choudhury, 2011; Dash, 2010).

The capacity of Forest Protection Committees (formed under JFM) or Village Forest Committees to draw on legitimate sources of authority to enforce community rights to forest lands varies greatly. In areas with strong traditional community management systems, village forest management committees have been generally successful in keeping out encroachers from other villages or pastoralist groups and in ensuring that their own members follow the rules (Sarin et al., 2003). In communities with weakened traditional systems, however, villagers have struggled to enforce their rights with respect to outsiders and have also experienced difficulties in getting their own members to adhere to forest use rules (Sarin et al., 2003). Relationships with state Forestry Departments are often tense, and obtaining assistance for enforcement may require villagers to pay a bribe, which deters many villagers from seeking enforcement assistance from the state (Kashwan, 2003).

12.4 USER GROUP ATTRIBUTES

Although communities now exercise considerably more management authority over forests, and in many cases have more secure use rights to nontimber forest products, India still has considerable room for improvement in forest governance. Perhaps the clearest indication of the need for improvement is the controversy and foot-dragging on the part of the state forestry services and the Ministry of Environment and Forestry that surrounds the implementation of the 2006 Forest Rights Act (Council for Social Development, 2010). Although timber companies no longer pose a major threat to community access to state forests, other stakeholders with equally strong potential for engaging in environmentally destructive practices, such as mining companies, irrigation schemes, biofuel firms, and pulp and paper companies, have emerged to replace them. On a positive note, India's courts have a relatively strong record in supporting environmental protection and forest conservation, and in 2010, India established a National Green Tribunal to expedite the hearing of environmental and forest law case (Desai and Sidhu, 2010).

12.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

India has a population of about 1.2 billion, 70 percent of which resides in rural areas (Kishwan et al., 2007). It is culturally very diverse with people speaking more than 1600 languages and dialects and following a variety of cultural practices and traditions (Kishwan et al., 2007). About 400 million people in India depend on forests for their livelihoods (FAO, 2010). Roughly 170,000 villages have forest land within their boundaries (Kothari et al., 2011). In addition to wood for construction, pulp, and fuelwood, India's forests provide a

wide range of nontimber forest products (NTFPs) such as bamboo, rattan, and pine resins (GOI, 2009). Forests are particularly important for landless forest dwellers, 80 percent of whom rely on NTFPs for subsistence goods, and 56 percent of whom derive an income from the collection and sale of NTFPs (GOI, 2009). Forests provide the fuelwood that meets 40 percent of India's domestic needs, and fodder for 30 percent of the cattle population's needs (Kishwan et al., 2007).

12.4.2 POWER RELATIONS

Forest dwellers in India have historically wielded limited power relative to the centralized government, including the forestry agents charged with issuing forest concessions and enforcing rules governing the use of reserved and protected forest lands. Colonial forest policies declared large areas of India state owned forest lands, often forcibly evicting forest dwellers from their traditional homes and criminalizing their hunting, pasturing, and gathering practices (Véron and Fehr, 2011). During the mid-20th century, many of the state forestry services became notorious for illegally transferring ownership rights over state forest lands to wealthy individuals, depriving forest peoples of their use rights to those lands (Véron and Fehr, 2011). The low state fees for logging concessions between the 1950s and 1980s were a boon to timber companies, but often devastating to forest dwellers whose livelihoods depended on the nontimber forest products growing in the areas targeted for felling operations (Kishwan et al., 2007).

Recent national legislation, notably the 1996 Panchayats (Extension to the Schedule Areas) Act and 2006 Forest Rights Act, as well as state-level laws setting forth guidelines for Joint Forest Management, have provided forest dwellers a legal foundation for defending their rights to customary lands located in reserved and protected forest lands (Véron and Fehr, 2011). However, forest dwellers have protested the slow implementation of the 2006 Forest Rights Act in Orissa, Bihar, Chhattisgarh, Maharashtra and other states (Dash, 2010). Moreover, villagers are often hard-pressed to enforce their claims in court against much wealthier interests, such as housing developers, agri-businesses, mining companies, and international conservation groups (Choudhury, 2011).

12.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

India's legal framework indicates the presence of a strong and broad-based societal interest in conservation. The Constitution of India calls for the government to protect forests and wildlife, and the forest laws and policies developed from 1980 onward have a strong emphasis on conservation (Véron and Fehr, 2011). India launched the Green India Mission in 2010, a program which will fund afforestation and restoration initiatives throughout the country over the next 10 years (GOI, 2010). International donor organizations, such as the World Bank, Department for International Development (UK), Japan Bank for International Cooperation, as well as private foundations, such as Ford Foundation, have provided substantial support for governance reforms in India's forest sector (Kishwan et al., 2007). At the same time, strong countervailing forces to conservation exist within India. Rapid economic growth has fueled demand for mining expansion, massive irrigation schemes, biofuel plantations, and land for housing developments (USAID, n.d.). For example, the Ministry of New and Renewable Energy has plans to support jatrohpa plantations on 2.29 million hectares identified as "wastelands" (Flaming and Stanley, 2010).

12.5 ECONOMIC ATTRIBUTES

The average country-wide opportunity cost for REDD projects in India is between US$1000 and US$2000 per metric ton of CO_2 (Deveny et al., 2009). The most likely alternative uses (from a villager's perspective) are conversion of forests to agricultural plots (subsistence and cash crops), conversion to agroforestry systems, grazing, and in some areas, ecotourism activities. We were unable to locate studies on the opportunity costs of these with respect to REDD+ in India.

The greatest returns for retaining forests will likely be in areas with a diversity of commercially valuable nontimber forest products and where strong community traditions governing extractive uses are in force.

Potential methods for retaining land in forest cover are through REDD+ payments supporting alternative non-forest based income opportunities, payments for ecosystems servies (PES), assistance with marketing certified and value-added forest products, assistance with establishing ecotourism enterprises, and improved forest governance, especially in areas where traditional enforcement mechanisms are weak or non-existent.

India has an overall Moderately High Forest Carbon Index Score (Deveny et al., 2009); areas with high profit potential forgenerating large amounts of low-cost carbon are located primarily along the western coast and in the state of Orissa; the states of Jharkhand and Chhattisgarh have areas with moderately low potential for profits.

12.6 OPPORTUNITIES FOR TENURE INVESTMENTS

With the implementation of India's 2006 Forest Rights Act in full swing, it makes sense to focus tenure investments on building the capacity of title holders to enjoy the rights secured by their titles and to fulfill the responsibilities that come with those rights. It also makes sense to strengthen the capacity of local, state, and national institutions to provide a productive enabling environment for FRA title holders. Some of the weaknesses that have been identified with the FRA's implementation process include the following:

- Failure in some states to include women, members of scheduled tribes, and other traditional forest dwellers on Forest Rights Committees as required by the FRA.
- Fairlure to include nomadic pastoralists and "pre-agricultural" groups in FRA implementation.
- Eviction of forest dwellers prior to the verification of their rights under the FRA
- Rejection in some states of nearly all claims without sufficient grounds.
- Rejection of community forest rights claims that overlap with JFM lands (even though FRA claims take precedence over JFM rights)

These barriers to a smooth and rapid process of evaluation and titling of FRA claims might be productively addressed with the following strategies. These strategies largely align with those suggested by a recent Joint Committee called to assess progress toward implementing the FRA.

- Support for outreach and awareness campaigns aimed at educating rights claimants, title holders, the members of local Forest Rights Committees, members of the Gram Sabhas, elected officials at all levels, and Forestry and Revenue Department officials about their rights and responsibilities under the provisions of the law.
- Support for activities that promote transparency and accountability of Forestry and Revenue Department officials, the Gram Sabhas, and the Forest Rights Committees.
- In looking toward the future, support to provide members of Gram Sabhas with the leadership and governance skills they will need as they take on a more active role in forest management.and law enforcement.
- Support for outreach and capacity-building specifically targeting pastoralists and "pre-agriculturalist" groups. To complement this outreach effort, it would be helpful to hold a series of multi-stakeholder dialogues critiquing the concept in Indian land law of barren wastelands, i.e., the presumption that land that is not used for farming, horticulture, timber management, or intensive pasturage has no owner and is thus available for the state to give away. The purpose of these dialogues would be to improve understanding of the ecological and socal values of such landscapes, as well as to promote better relations between pastoralists and sedentary agriculturalists.

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13.0 INDONESIA

13.1 FOREST ATTRIBUTES

13.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Most forests in Indonesia are described as broadleaf evergreen, broadleaf deciduous, swamp or mangrove forests. Average annual rainfall ranges from as high as 4000 mm in highland areas of Sumatra and Kalimantan, 2,000-4,000 in most of Sumatra, Kalimantan and western Java, to less than 2,000 mm in eastern Java and the eastern islands of Sulawesi, Bali and others.

Indonesia's deforestation rate was 0.71 percent/annum between 2005 and 2010 (FAO, 2010), with large variation between provinces in both the level and the causes of deforestation. Between 1990 and 2005, it is estimated that emissions from deforestation averaged 0.68 Gt CO_2 e per year from all provinces of Indonesia, with an average of 2.14 metric tons of carbon per hectare/year (Ekadinata and Dewi, 2011). The Draft National REDD+ Strategy indicates that the main causes of deforestation and forest degradation are: weak spatial planning, problem with tenure, ineffective forest management, weak governance and weak low enforcement (REDD-Monitor.org).

The main alternative uses of forest land are forestry concessions, timber extraction for pulp and paper, swidden agriculture, conversion to timber plantations, commercial tree crops (especially oil palm and coffee), agroforestry systems, annual crops, degraded grasslands and nature reserves).

13.1.2 CARBON STORAGE CHARACTERISTICS

Indonesia has the second or perhaps third, largest forest carbon stock in the tropics (with only Brazil and possibly the Democratic Republic of Congo having larger stocks) (Saatchi et al., 2011). In recent estimates of Indonesia's forest carbon stock, the Accountability and Local Level Initiative to Reduce Emissions from Deforestration and Degradation in Indonesia (ALLREDDI), estimated that above-ground carbon stocks varied from 16.92 Mg/ha in the Lesser Sundas' deciduous forest to 92.73 Mg/ha in the peat swamp forests of Sumatra (Harja et al., 2011). It is estimated that undisturbed forests have average carbon stocks of 85-90 metric tons per hectare, plantations and agroforests 30-40 metric tons per hectare, and grasslands and croplands between 1 and 2 metric ton per hectare. Carbon stocks are particularly high on the islands of Kalimantan and Papua (100-400 metric tons per hectare) (Ekadinata and Dewi, 2011). Indonesia also has large areas of carbon-rich peat soils (20.9 million hectares), 60 percent of which are forested or recently deforested. Peat soils are estimated to contain 300-700 metric tons of C per cubic meter and thus degradation of peat soils is a very potent source of CO_2 emissions (Wahyunto and Agus, 2010).

A 2007 report by the ASB Partnership for the Tropical Forest Margins (Swallow et al. 2007) shows that most deforestation in Indonesia is associated with land use changes that generate very low returns per tonne of CO_2 emitted. In other words, there is potential to generate large amounts of avoided emissions from deforestation and forest degradation at low opportunity costs. This is particularly the case in relatively remote and sparsely populated areas, such as East Kalimantan, and less so in areas such as Java and South Sumatra.

The Forest Carbon Index for all of Indonesia is estimated to be 92, with areas of highest Forest Carbon Index concentrated on the Island of Borneo and Papua. Smaller areas of high FCI are located on the Islands of Sulawesi and Sumatra.

13.1.3 REDD+ PLANNING AND ACTIVITIES

In late 2006, Delft Hydraulics and Wetlands International released a report that claimed that deforestation and degradation of Indonesia's peat lands was responsible for a massive amount of greenhouse gas (GHG) emission, implying that Indonesia was actually one of the five largest emitters of GHGs in the world. At the same time that this information was being disseminated, digested and contested, a number of international organizations joined forces with the Government of Indonesia to produce one of the world's first REDD strategies. Indonesia's REDD strategy development process involved both Indonesian forest authorities and international organizations and expertise. Progress with the development and implementation of a REDD strategy has continued since that time. Indonesia participates in the Forest Carbon Partnership Facility and UN-REDD. A final Readiness Preparation Proposal (R-PP) has been submitted to the Forest Carbon Partnership Facility and UNREDD is supporting capacity building and strategy development. Indonesia has also become a favored location for REDD demonstration projects, with 39 demonstration projects in some phase of implementation as of May 2012 (Forest Carbon Asia, 2012).

13.2 POLICY ATTRIBUTES

13.2.1 POLICY CONTEXT

Indonesia had a highly centralized system of government during the years of President Suharto. The "Reformasi" movement began in 1997 when his government was ejected from power. Responsibility and authority for a range of issues has been shifted from central to district authorities through a variety of legislative reforms. Decentralized governance of land tenure and forest management has occurred to some extent, but with considerable resistance from both central and state-level forestry authorities. There is concern that the decentralization may actually have adverse effects on the land rights of indigenous people if local authorities opt to increase timber or mining activities beyond extraction levels practiced by the centralized government. . Based on his research looking at how decentralization affected indigenous ethnic minorities Duncan (2007: 728) argues that the ability of indigenous groups to benefit from decentralization depends on "the potential of their natural resource base, their levels of political organization, and the ability of local leaders to work effectively and honestly within the new frameworks created by regional autonomy". In particular, he identifies smaller groups and groups that are less well-organized politically as being more likely to maintain the status quo or experience negative effects from decentralization.

13.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

In 1999, Indonesia implemented a Forestry Law that provided for the creation of 'customary forests' and 'special purpose management areas.' While organizations such as the World Agroforestry Centre have been able to lobby for the designation of certain areas under these two categories, the designations have still not been widely applied.

Devolution of all types of governance started with the ouster of President Suharto and the dawn of Reformasi in 1998. Devolution of forest governance is still an incomplete process in Indonesia, in part due to legacies lingering from the Suharto era. The Worldwide Governance Indicators for Indonesia suggest that the trend from 2002 to 2009 was toward improved governance, with control of corruption and political stability being the most problematic areas of governance (see Table 13.1).

TABLE 13.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

(-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	-0.08	-0.41	+
Political Stability	-0.78	-1.61	+
Government Effectiveness	-0.26	-0.47	+
Regulatory Quality	-0.32	-0.65	+
Rule of Law	-0.60	-0.95	+
Control of Corruption	-0.81	-1.14	+

Corruption perceptions index score = 3.0 Rank 100 of 178 (Transparency International 2010).

13.3 TENURE ATTRIBUTES

13.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

The Basic Forestry Law of 1967 had the effect of legally dispossessing about 100 million people of their land rights, with rights formally transferred to the Forestry Department. Concessions were then granted by the Forest Department to forestry companies. Large areas of land that are now defined as 'forest estate' are now virtually devoid of trees, while similarly large areas of forest estate are actually agroforestry systems that are heavily managed by the rural populations. The Basic Forestry Law was revised in 1999, granting forest villages equal access to use and manage forests. While forests officially remained the property of the state, there were openings for greater community rights to forests.

The two major types of community-based tenure arrangements that have emerged so far in Indonesia include Community-Based Forests (*Hutan Kemasyarakatan* [HKm]) and Village Forests (*Hutan Desa*). Community-Based Forests provide groups of farmers with 35-year contracts to manage selected production or protection forests and rights to harvest forest products. Village Forests enable village-based institutions to obtain a 35-year lease to manage and protect state forestlands. Although Indonesia has many customary tenure systems operating at varying levels of functionality, the centralized government has strongly resisted efforts to implement legislation that would recognize customary ownership claims to forest resources. So far, the total area under either type of arrangements is very small. The contracting arrangements in particular are relatively cumbersome and successful contracts usually involve NGOs or research organizations.

Box 13.1: Devolution of forest governance in Sumber Jaya

The Province of Lampung is located at the southern end of the Indonesian island of Sumatra and is divided into 13 regencies and 185 sub-districts. Devolution of forest governance in Lampung is most advanced in the sub-district of Sumber Jaya in Lampung Barat Regency. Sumber Jaya is located in the Bukit Barisan mountain range and forms the headwaters of the Tulang Bawang River. The sub-district covers an area of about 550 km^2, about 50 percent of which is classified as private land, 40 percent as protection forest, and 10 percent as national park. Average population density is about 150 people / km^2, with the majority of the population being migrants from Java who moved to the area in the 1970s to grow coffee, both on private land and protection forest. The main land use has been coffee gardens. Farmers create coffee gardens by burning and clearing forest, planting upland rice for a few seasons, and then planting a combination of coffee, fruit and timber trees. Coffee gardens produce different mixes of outputs at different times after clearance: rice for a few seasons, then coffee, then a mixture of coffee and timber, and finally a mixture of coffee, timber and fruit. Without security of tenure, farmers are likely to plant few timber or fruit trees, and instead maintain coffee monocultures.

From the 1970s to the mid-1990s, the Sumber Jaya area had seen a considerable level of land use conflict between the Forestry Department and farmers who had established coffee gardens in the protection forest. Conflict was particularly high after a public hydro-power company established a run-of-river hydro-power plant on the Way Besai tributary of the Tulang Bawang River and claimed that deforestation would reduce stream flows. Hundreds of farmers were evicted from the area between 1991 and 1996. In 1997-8, the World Agroforestry Centre (ICRAF) began conducting research in Sumber Jaya, following a negotiation support system approach in which they sought to improve the base of evidence supporting negotiations over land use in the area. Prominent NGOs and the public power company also became involved in the negotiation process and in 2004 the area became one of the sites in the RUPES project (Rewarding Upland Poor for Environmental Services; www.rupes.worldagroforestry.org). In 1999, the first community forestry (HKm) agreement was established between a group of 478 coffee farmers and the forestry department covering an area of 362 hectares of protection forest. Contracts stipulated the types of trees (timber and fruit) and density of trees (at least 400 per hectare) that farmers were required to plant with their coffee trees. Between 1999 and 2006, another 19 HKm contracts were negotiated, covering 130 km^2 and 6400 farmers. The initial HKm contracts were set for a period of 5 years, with the likelihood of extension for another 25 years. The contracts allowed farmers to harvest and sell coffee and fruit, but not the right to cut and sell timber trees. Farmers were allowed to transfer their land use rights only to other group members (Arifin et al. 2009).

A considerable amount of research has been conducted on the Sumber Jaya experience under the RUPES program and a USAID BASIS Collaborative Research Support Program (CRSP) project. Verbist et al. (2005) showed that one of the basic assumptions of the HKm contracts was fallacious. That is, the Forestry Department assumed that deforestation had led to reduced flows of water into the Way Besai power plant, while, in fact, conversion of the land from forest to coffee garden actually increased stream flow and thus the amount of power that can be generated by the run-of-river facility. Deforestation of river bank areas had increased the flow of sediment into the river channel, and farmers were able to undertake specific actions to reduce sediment loads. Suyanto et al. (2005) found that fire has been much less of a problem since 1998 - farmers with more secure tenure may be more likely to carefully control their use of fire to clear land. Under the CRSP project, Arifin et al. (2009) showed that farmers strongly favoured the HKm contracts over the alternative of contested tenure. Farmers had strong preferences for contracts with greater duration, and were not particularly concerned about the tree planting requirements of their current contracts. Kerr et al. (2008) showed that farmers abided by the terms of the HKm contracts, increasing timber trees in coffee gardens and reducing clearance of new protection forest. However, there was little impact on incomes (since farmers did not have the right to cut the timber trees) and land prices in the HKm areas remained much lower than in private land areas, perhaps reflecting continued concern about the long-term security of the HKm contracts.

Box 13.2: Contestation of forest tenure in the Krui damar (*Shorea javanica*) agroforests

Scientists from the French Institut de Recherche pour le Développement (IRD) and the World Agroforestry Centre were among the first to document the fascinating story of the damar (*Shorea javanica*) agroforests in the Krui area of west-central Sumatra. From the air or a nearby hilltop, the damar agroforests appear to be dense primary forests. Examined up-close, however, the agroforests are highly productive and highly diverse forest gardens. Research showed that the damar systems are established by clear-cutting, then planting rice for a few years, then planting a mixture of trees that yield a range of products – coffee, timber, fruit, resin -- over the next 40-50 years. Due to the very productive soils and agro-ecological conditions, the trees mature very quickly; within ten years of clear cutting the forest gardens resemble secondary forests; within 20 years they look more like primary forests. The agroforests harbor an amazing amount of biological diversity, at the same time as they generate good returns for the local residents. The damar system is at least 100 years old, and local residents have strong customary rights to individual plots of land (Michon 2000).

During the Suharto era, the damar forests in the Krui area were declared to be state forest land that should be used for timber production. A concession was about to be granted to a forestry company that had plans to harvest the area for its timber value. The World Agroforestry Centre and local NGOs became involved in the mid-1990s in a bid to stop the concession from being granted. After many months of intensive negotiation and lobbying, in 1998 the Indonesian Minister of Forestry announced a "historic decree" that the Krui damar agroforests should be recognized as a special cultural preserve, thus stopping the potential for re-allocation of the land to a timber company. Approximately 290 km² of damar agroforests in the Krui area were designated as a KdTIarea and the decree acknowledged local people as the only beneficiaries from management of the area (Kusters et al. 2007).

While the Historic Decree was an important victory for the Krui people, they were not satisfied with the result. They did not sign the agreement with the government to recognize the validity of the special designation given to the area. The people of Krui believed that the original zoning of the area as state forest was erroneous; they were not satisfied with the special designation, nor with any other social forestry designation. For these long term residents of the area, the only acceptable solution was to have the area rezoned from forest to private land. As far as we can ascertain, this contested situation still continues (Kusters et al, 2007).

13.3.2 TENURE SECURITY

Most forest dependent people still have very weak de jure rights to land and forests in Indonesia. However, the de facto property rights situation varies greatly over time and space. Immigrants who have recently settled and cleared land in forests of Indonesia still have very uncertain land rights, facing high risk of eviction (Arifin et al., 2009).

13.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Most tenure types do not provide local community groups with the right to exclude. Authority to exclude is generally held by forestry officials, often used against people with longer- or shorter periods of residency in the areas.

13.4 USER GROUP ATTRIBUTES

13.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

Besides having one of the largest forests in the world, Indonesia is also one of the world's most populous countries. The United Nations Population Division estimates that Indonesia had a human population of 239,871,000 people in 2010 (UN, 2010). Indonesia's Central Bureau of Statistics has estimated that 22 percent

of Indonesian citizens live in and around forests, approximately 52.6 million people. There is large variation in the characteristics of forest dependent peoples. Millions are swidden farmers in areas such as Kalimantan and Papua who rely on forests for gathered products and swidden agriculture. In Sumatra, there are both long-term indigenous residents, as well as a high proportion of relatively recent migrants from Java. Recent migrants in Sumatra tend to clear forests for planting crops; rotations generally include perennial crops (e.g., coffee, cocoa in Sulawesi), fruit trees (e.g., durian, jack fruit) and resin producing trees (e.g. rubber, damar).

13.4.2 POWER RELATIONS

Under the Suharto regime (1967 to 1998), a large part of the Indonesian land mass was classified as exclusive forest estate, despite the fact that millions of people had long lived in those same lands. There has been, and continues to be, a great deal of contestation over the allocation and use of areas declared to be production or protection forest. Until relatively recently, there has been a strong transfer of power over forest management toward forest authorities and away from rural communities. Many communities have felt at high risk of expulsion from the lands they occupy, especially in places with high migrant populations (Contreras-Hermosilla and Fey, 2005).

13.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

For many years, the Government of Indonesia has sought to raise revenues through the sale of timber concessions, resulting in a very high rate of deforestation (Yeager, 2008). However, tensions over how the nation's forests are managed have been strong, with considerable ipressure from both international and national environmental NGOs for Indonesia to conserve its forests. The high degree of biodiversity found in Indonesia's forested ecosystems, together with the large number of endemic species, many of which are at high risk for extinction, have placed Indonesia high on the list of areas to be targeted for biodiversity conservation (Yeager, 2008). As the example from Sumber Jaya (see Box 13.1) illustrates, forests have also been an object of contention due to their water conservation services.

13.5 ECONOMIC ATTRIBUTES

It is estimated that most deforestation in Indonesia converts land into uses that generate net positive, but low, rates of return. Swallow et al. (2007) estimated the opportunity costs of avoided emissions from deforestation in 3 provinces of Indonesia and found opportunity cost of less than $1 / metric ton CO_2 for peat forests converted to crop cultivation in southern Sumatra and less than $5 / metric ton for most other land use changes.

Land uses with the highest financial returns per hectare are some commercial tree crops, particularly oil palm. Multi-strata agroforests can also generate reasonably high returns. Annual crops such as cassava usually generate low returns per hectare (Swallow et al., 2007). A number of studies have confirmed that the proximate and underlying causes of deforestation and forest degradation vary from location to location across Indonesia. The availability of profitable land use alternatives, such as coffee and rubber, generate incentives for forest conversion; insecure land tenure means that land users have few incentives for forest conservation.

13.6 OPPORTUNITIES FOR TENURE INVESTMENT

Three major challenges surround the devolution of forest tenure in Indonesia. First, many areas that were declared to be part of the "forest estate" during the Suharto era are either devoid of tree cover and / or are legitimately considered to be the private property of individual landowners. Second, there is a challenge to identify and implement the most appropriate system of devolved governance. In some areas, it is clear that customary "Adat" systems are most appropriate, while in other places more democratic systems may be more appropriate. Third, there is a challenge to implement forest rights devolution in a way that is effective and efficient. The examples provided in Boxes 13.1 and 13.2 show that farmers' regard for social forestry contracts depends upon their sense of prior right. In the damar agroforest areas of Krui, for example, long-

term residents felt that the state had no right to declare their land as production forest and thus are reluctant to accept anything other than full private property rights. In the Sumber Jaya area, in contrast, migrant farmers who were less secure in their rights were quite interested in any type of legal recognition of the their rights. Across such a large and diverse country as Indonesia, there are bound to be large differences in actual devolution experiences.

In Indonesia there are many opportunities for investment in forest rights devolution. While these will vary a great deal from place to place, some possible investments are as follows:

- Support to action and capacity building in natural resource conflict resolution. CIFOR and others have shown that there still is considerable conflict over forest resources in Indonesia and that there is continued need to provide people and institutions with skills and resources to manage such conflicts.
- Support at the local and state levels to processes for devolving forest governance. Depending upon the situation, this might include, for example, support to cadastral surveys and land registry offices.
- Creation and support to institutions that can effectively manage REDD funds. The low governance scores reported for Indonesia mean that there is still considerable uncertainty about the effectiveness, accountability and transparency of organizations that could channel funds from international REDD mechanisms to actual land users. The international community of conservation organizations, including the Global Environmental Facility, has considerable experience in creating institutions for channeling conservation finance. Those experiences and, in some cases institutional arrangements, may be very relevant for managing REDD finance.

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14.0 NEPAL

14.1 FOREST ATTRIBUTES

14.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Nepal's forests cover 3.6 million hectares or 25 percent of the country (FAO, 2010). The primary ecozones of Nepal include the High Himalayas, High Mountain, Middle Hills, Churia Hills, and Terai (Kanel 2010). Forest types in these areas include Sal forest, Katus-chilaune forest, and pine forest. Primary forests cover only 14 percent of the forested area, while 84 percent is natural regeneration and 1 percent is plantations (FAO, 2010). Plantations are dominated by native species.

Nepal's forest cover did not change significantly between 2005-2010 (FAO, 2010). This represents a substantial improvement over the -0.39 percent annual rate of deforestation between 2000-2005. In fact, some estimates claim that biomass in Nepal's forests has increased since 1994, with the largest increase in Katus-chilaune and pine forests (Kanel, 2010). In the Terai region, where the majority of forest is still under state management, deforestation remains high (Joshi et al., 2010). Drivers of deforestation in this area include illegal logging, wood fuel harvesting, agricultural encroachment and unplanned settlements, with the ultimate cause being unclear tenure (Davis et al., 2012).

14.1.2 CARBON STORAGE CHARACTERISTICS

Nepal's forests are estimated to store 485 million metric tons of carbon in above ground biomass (133 metric tons/ha) (FAO, 2010). According to Kanel (2010), there are approximately 109 metric tons of carbon stock/ha in all Nepal's forests, with the majority found in Sal and Katus-chilaune forest.

According to Derveny et al. (2009), the average cost for Nepal's forest carbon is $15.47/ha, just over the world average. Joshi et al. (2010) estimate the net present value of several land uses. Settlements are most profitable at $7875/ha, followed by rice fields at $1802/ha, other crops at $1352/ha, dense forest at $1063/ha, plantations at $808/ha, grasslands and pastures at $676/ha, and degraded forest at $638/ha.

Nepal has a moderate Forest Carbon Index (FCI) score of 82, but its risk index of 0.31 (on a scale where 0 represents the most risk and 1 the least risk) offsets some of its desirability as a place for investing in in forest carbon.

14.1.3 REDD+ PLANNING AND ACTIVITIES

Nepal has a Readiness Preparation Proposal (R-PP) which was developed though a multi-stakeholder consultation process. It has received $3.6 million from the Forest Carbon Partnership Foundation (FCPF) for Readiness activities as well as pledges of bilateral support from Switzerland, Finland, Japan and the US (Davis et al., 2012). Nepal has a demonstration REDD project that incorporates 104 Community Forest User Groups (the community level groups empowered to manage and protect forest areas under Nepal's 1993 Forest Act) in three watersheds based on a four-year grant from Norway.

14.2 POLICY ATTRIBUTES

14.2.1 POLICY CONTEXT

Until 1957, forests were primarily private property although access to forests was managed under customary community-based institutions (Achyara, 2002). The Private Forest Nationalization Act of 1957 nationalized all forests, upsetting the traditional forest use institutions and resulting in increased deforestation. The Forest Act of 1961 provided a legal basis for community forests with the designation of Panchayat Forests (PF) and Panchayat Protected Forests (PPF) (Kanel, 2010). This provision only came into practice after the promulgation of Panchayat Forest Regulation (1978) and Panchayat Protected Forest Regulation (1978) (Shrestha 2003), which introduced the concept of participatory forestry and de-concentrated some management rights to local political bodies, primarily in middle hills (Kanel, 2010). The current political basis for community forestry in Nepal, however, is based on the Forest Act of 1993 and the Forest Regulations of 1995 which outlined user group formation processes and hand-over mechanisms, providing an environment conducive to devolving management rights to CFUGs (Acharya, 2002; Shretha, 2003; Kanel, 2010). The 1993 Forest Act's Community Forestry Programmereceived Honorable Mention for the Future Policy Award 2011 by the World Future Council (World Future Council ,2011) . The 2011 awards were given out to countries that had implemented visionary forest policies aimed at achieving sustainable forestry while providing for economic livelihoods.

14.2.3 POLICY AND GOVERNANCE EFFECTIVENESS

TABLE 14.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

(-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	-0.58	-0.81	+
Political Stability	-1.81	-1.80	-
Government Effectiveness	-0.95	-0.50	-
Regulatory Quality	-0.78	-0.58	-
Rule of Law	-0.96	-0.52	-
Control of Corruption	-0.75	-0.29	-
Corruption perceptions index score = 2.2 Rank 154 of 178 (Transparency International 2010).			

In the past three decades, Nepal's forest policies have shifted dramatically toward decentralized, participatory management where communities are engaged in decision making about forest management, especially in CFUGs. There are still concerns, however, that elites capture the majority of benefits and that women, indigenous, and the poor rarely participate in decision making (Shrestha, 2003; Joshi et al., 2010). Additionally, the devolution of forest management rights is not equitably distributed geographically. The Terai region, where the most valuable timber resources are found, is still principally under state control. This region is also where there are known issues of illegal logging and encroachment on forests.

14.3 TENURE ATTRIBUTES

14.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

While the federal government owns all forest land, approximately 25 percent of Nepal's forests have been designated as community forest (Ohja et al., 2009). Community Forests are a portion of the National Forest that Community Forest User Groups (CFUGs) can use.

Through a registered association, communities have access, withdrawal, management and exclusion rights in these areas and regulations are developed by CFUG with the District Forest Office (DFO) (Kanel, 2010;

Andersen, 2011). The General Assembly of the users makes major decisions that are then implemented by the Executive Committee. Forest Inventories and Operation Plans are done with the assistance of the DFO. CFUGs carry out all sales and distribution of forest products.

In addition to Community Forests, which are forest lands managed by communities under the 1993 Forest Act, communities can participate in forest management through Collaborative Management and Buffer Zone Management on government lands (Joshi et al., 2010). Buffer Zone Management was created by the Wildlife Conservation Act of 1993 which declared that parks can establish buffer zones and allow communities to manage, extract and sell certain forest products according to the Buffer Zone Management Guidelines that are overseen by the Park Warden (Vhugen et al., 2012). Collaborative Forest Management (CFM) started in 2000 as an alternative to CF in the region of Terai, where the large size and value of forests, combined with heterogeneous users, created the perception that CF was not viable. With CFM, users only have access and withdrawal rights and share the profit of any products with the government. A final access type is called Leasehold Forestry and is reserved for groups of very poor villagers who lease degraded land on 40-year cycles (Andersen, 2011). Leasehold Forestry participants have use, withdrawal, management, and exclusion rights.

The federal government retains the primary authority over forest resources, with 74 District Forest Offices. District Offices represent the government on a regional scale and have authority to devolve and oversee CFUG's as well as provide financial and technical resources (Government of Nepal, 2011).

14.3.2 TENURE SECURITY

While the country received Honorable Mention in the World Futures Council's Future Policy Award ceremony for its visionary community forest program, the internal political climate of Nepal has been chronically unstable for the past decade (Davis, 2012). As a May 2012, a new constitution, which could affect land management regulations and tenure security, had yet to be drafted. The lack of security is most felt in the Terai region (Dahal and Adkhikari, 2008).

14.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

The adjoining communities have the right to choose membership and enforce exclusion rules for allocated Community Forest areas (Andersen, 2011). While the Department of Forestry is the gate keeper of the forest and can take actions against the CFUG and its members, the Federation of Community Forest Users, Nepal (FECOFUN) is a strong, higher level organization that defends the rights of forest users (Andersen, 2011). Additionally, many communities have become well organized and educated to enforce their rights.

14.4 USER GROUP ATTRIBUTES

14.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

Over 80 percent of Nepal's population relies heavily on forest resources for their livelihoods (Acharya 2002). In addition to extracting fuel, fodder, poles and timber from forests, there is a strong link between small-scale agriculture and forestry in Nepal's forested communities (Kanel, 2010; Andersen, 2011); 32 percent of the annual GDP is derived from agriculture and forestry. As of 2010, there were over 14,000 Community Forest User Groups in Nepal, with almost 800 women-only groups. This comprises 1.66 million households, or 39 percent of the total population. The actual contribution of community forestry to livelihoods is still questionable, however (Kanel, 2010). Groups that rely on forest resources but don't directly have access (such as blacksmiths, firewood sellers and charcoal makers) are experiencing economic difficulties as the community forest products are generally auctioned to the highest bidder (Shrestha, 2003).

14.4.2 POWER RELATIONS

The federal government is the primary authority over forest resources, with 74 District Forest Offices. District Offices represent the government on a regional scale and have authority to devolve and oversee CFUG's as well as provide financial and technical resources (Government of Nepal, 2011).

14.4.3 BROADER SOCIETAL INTERESTS IN FOREST CONSERVATION

Forest conservation is a primary interest of the Nepalese government because of the severity of forest degradation during the 1960s and 1970s (Pandit and Bevilacqua, 2011). Consequences of degradation included soil erosion, landslides, flooding, loss of water in creeks and loss of forest resources. Thus, there is a national interest in forest conservation for watershed protection and tourism that revolves around the beauty of the Himalayan forests. Support for forest conservation also comes from national and international interests in devolving land rights to communities to manage natural resources in perpetuity.

14.5 ECONOMIC ATTRIBUTES

Because the majority of Nepal's income is derived from forest resources, there are economic incentives to conserve forests. At the same time, agriculture and community settlements are important uses of land for income generation. A recent USAID case study on benefit distribution related to REDD+ activities in Nepal reports variable revenue outcomes for participating in REDD+ (Davis et al., 2012). A conservative carbon price, estimated by Ojha et al. (2008), found that communally managed forests could bring $3.6-7.2 million/year. Staddon (2009) claimed $90.9 million/year. The current annual income for community forestry is estimated at over $10 million (Pokharel et al. 2008).

14.6 OPPORTUNITIES FOR TENURE INVESTMENTS

Nepal is considered one of the world's "poster children" for the number of people who are engaged in its Community Forestry program (and related forest governance devolution programs) and the percentage of its forest land that falls under some form of community management. Nonetheless, the literature identifies a few weaknesses in Nepal's forest tenure system, including the following:

- Decision making in CFUGs tends to be dominated by elites; and both women and lower caste men tend to be mch less likely to participate in meetings than higher caste men (Gautam 2009).
- Harvesting and distribution systems for firewood are typically structured in ways that disfavor members of poorer households, who are often engaged in wage labor at times when the forest is open for harvesting by members (Gautam 2009).
- Many CFUGs lack the technical and financial capacity to meet requirements that they conduct forest inventories; thus restricting their ability to engage in more intensive forest management.
- The CFM approach used in the Terai has proved much less successful than the CF model in the Middle Hills.
- Pro-poor leaseholds are limited in how much they can improve incomes due to the poor quality of the forests allocated to the Forest Leasehold program.

Tenure investments that could help address these issues include the following

- Support for developing local producer association capacity to engage effectively in marketing timber and nontimber forest products. One promising avenue would be to follow the model used in Latin America of providing technical and financial assistance so that community groups can acquire FSC certification for their products, thereby enhancing their ability to participate in global markets.

- Support for programs designed to empower women and lower caste men, such as providing training in organizational and leadership skills and setting up peer-to-peer networks.
- Support for legislative reforms aimed at opening up higher value forests to pro-poor forest leaseholding arrangements.
- Support for legislative reforms to provide CFM participants in the Terai with a greater share of benefits
- Support for legislative reforms that would permit CFUG members to develop less technical and more culturally appropriate forest inventories in lieu of the excessively technical plans that are presently required.

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15.0 PHILIPPINES

15.1 FOREST ATTRIBUTES

15.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

The Republic of the Philippines is an archipelago of more than 7000 islands with a total land area of 29.8 million hectares (Blaser et al., 2011). Approximately 15 million hectares, or 53 percent is administratively categorized as forest land. However, not all such land is covered with forest; much consists of degraded bushland, tree plantations, or agroforestry systems. Only 7.7 million hectares, or 26 percent of the country is actually in forest cover (FAO, 2010). Not all land in the Philippines that is categorized statutorily as forest land is actually covered with forest.

About 81 percent of the forest consists of evergreen rainforest, 10 percent is semi-evergreen forests, and 9 percent is mountain forest (Blaser et al., 2011). Major tree species include *Pentacme contorta* (white lauan), *Shorea negrosensis* (red lauan), *Vitex parviflora* (molave), and several species of pines and palms. Mangrove forests cover about 250,000 hectares. Estimates of the area in plantation forests vary from 314,000 hectares to 352,000 hectares (Blaser et al., 2011).

After decades of high rates of deforestation, the Philippines began experiencing during the 2000s a growth in forest cover. The country's forested area grew at a rate of 0.73 percent annually between 2005 and 2010, declining just slightly from an annual rate of increase of 0.76 during the previous five years (FAO, 2010). This shift toward forest cover expansion is similar to that being experienced in other Asian countries, such as China, India, and Vietnam. The factors contributing to forest cover expansion are discussed below. Primary forests cover 11 percent of the country's forested area, while 84 percent of the country's forest cover consists of natural regeneration. The remaining 5 percent is covered with plantations, which are composed almost entirely of introduced species. No definitive studies have been done of the causes of deforestation in the Philippines. However, likely primary drivers of deforestation include illegal timber and firewood harvesting, expansion of agriculture, strip-mining, migration into upland forest areas, and plantation development (Phelps, 2010). Road infrastructure development, high agricultural prices, low wages, and dependency on agricultural sector employment are contributing factors to deforestation, as is inadequate forest protection (Phelps, 2010).

15.1.2 CARBON STORAGE CHARACTERISTICS

The country's forests store an estimated 663 million metric tons of carbon in above ground forest biomass (87 metric tons per hectare) (FAO, 2010). Philippines recently shifted from being a net source of CO_2 emissions to being a carbon sink (Blaser et al., 2011). The Philippines has strong potential to deliver co-benefits with greenhouse gas emissions reductions, such as biodiversity conservation and ecological restoration. The primary alternative uses of forestlands are timber operations, fuelwood harvesting, subsistence farming, urban settlements, and mining. Additionally, the Philippines has 83 formally recognized protected areas covering 2.17 million hectares (Republic of the Philippines (ROP) 2009).

15.1.3 REDD+ PLANNING AND ACTIVITIES

The Philippines is a participant in the UN-REDD Programme and completed its National REDD+ Strategy in 2010 (Phelps 2010). The strategy calls for the establishment of a National Multistakeholder REDD-plus Council, clarification of land tenure and carbon rights (especially for communities), broad-based consultation with forest stakeholders, and equitable benefit-sharing with local governments and communities (Phelps,

2010). The Philippines enacted a Climate Change Act ion 2010 (RA, 9729), which calls for the development of a National Strategy Framework on Climate Change (Phelps, 2010). Philippines is a signatory to the Kyoto Protocol, the UNFCCC, and UNCCD; it also is a signatory to the Convention on Biological Diversity (FAO, 2010).

At least nine forest carbon projects are being implemented in the Philippines, including private and public sector projects (Chokkalingam and Vanniarachchy, 2011). One private sector project involves 100,000 hectares of ancestral domain lands in Southern Luzon and is being developed as a partnership between Tokyo Electric Company and Fauna and Flora international. Conservation International has recently initiated the Quirino Forest Carbon Project, and afforestation/reforestation project under the Verified Carbon Standards program (Boncocan, 2011). The project is located in a 175,943 hectare protected area in Quirino Province, and seeks to simultaneously improve livelihoods, protect biodiversity, and mitigate climate change.

15.2 POLICY ATTRIBUTES

15.2.1 POLICY CONTEXT

State control over land and natural resources is deeply entrenched in the Filipino land law, which is based on the Regalian Doctrine from the Spanish colonial era (Pulhin, 2002). This doctrine, under which the Spanish government appropriated all land and natural resources and extinguished all existing claims, is reflected in the language of the 1987 Constitution which states: All lands of the public domain, waters, minerals, coal, petroleum, and other mineral oils, all forces of potential energy, fisheries, forests or timber, wildlife, flora and fauna and other natural resources are owned by the state" (Sec 2 Art XII). The Filipino government interprets this clause to mean that any untitled lands, including those occupied by indigenous peoples at the time of the Spanish conquest, are in the public domain and therefore belong to the state (Walpole and Annawi 2011).

However, the indigenous peoples of the Philippines never accepted this doctrine and mounted sustained and often-violent resistance to efforts to appropriate their lands (Walpole and Annawi, 2011). In 1997, their rights to land became recognized in law with the passage of the Indigenous Peoples Rights Act. This act formally recognizes indigenous peoples' title and rights to ancestral domains, but equally importantly also recognizes their rights to self-governance and cultural integrity (Asian Development Bank, 2002). The rights include: right of ownership, right to develop lands and natural resources, right to stay in territories, right to regulate entry of migrants, and right to resolve conflicts according customary law (ROP, 1997 Sections 1-8, Rule III, Part II). The Act also gives them the right to transfer ancestral land or property within their community. However, the law also lists responsibilities, which include maintaining an ecological balance and restoring denuded areas (Asian Development Bank, 2002). These laws place a land management burden on Indigenous Peoples that are not placed on other holders of titled land (Walpole and Annawi, 2011).

The 1991 Local Government Code specifies that the central government will devolve some of its powers and responsibilities to local government units (Dahal and Capistrano, 2006). The code grants local government units (LGUs) the power to levy taxes and fees, and it also mandates that resource management plans at the local level be developed through a direct participatory process. However, the devolution framework appears flawed in that power is only devolved to the municipalities, rather than to the barangay, which is the lowest level of local government (Dahal and Capistrano, 2006). The LGUs have powers to protect and regulate environmental and natural resources in their jurisdiction, however these powers are relatively weak as DENR retains supervisory authority and control over any decisions made at sub-national levels of government (Guiang and Castillo, 2006).

15.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

The Philippines has a relatively weak governance system as indicated by its Worldwide Governance Indicator Scores (Table 15.1). Corruption and political instability are the most serious weaknesses in its governance system; its regulatory quality and rule of law scores are comparatively strong. However, with the exception of

its rule of law scores, the Philippines experienced either no change or declines in its governance scores between 2002 and 2009. This suggests a need for any REDD+ efforts to include strong measures aimed at strengthening governance.

TABLE 15.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

(-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	-0.12	+0.14	-
Political Stability	-1.42	-0.61	-
Government Effectiveness	-0.14	-0.14	no change
Regulatory Quality	+0.02	-0.03	+ (barely)
Rule of Law	+0.53	-0.47	+
Control of Corruption	-0.71	-0.41	-
Corruption Perceptions Index = 2.4 (Rank = 134 of 178) (Transparency International 2010)			

Although the Philippines has made substantial gains in forest governance compared to the situation that prevailed prior to the mid-1990s, a recent review of corruption in the forestry sector concludes that the "effective enforcement, regulation and monitoring of environmental policies is undermined by rent-seeking system of securing permits, licenses and concessions to exploit natural resources" (Mayo-Anda 2011).

15.3 TENURE ATTRIBUTES

15.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

Land in the Philippines falls into three major tenure categories (Oliva, 2007): 1) Public domain lands (including forests, pasture, and mineral lands) that are owned by the state and which cannot be alienated, 2) alienable and disposable lands, which can be titled and privately owned, and 3) privately owned lands. As noted in Section 1.2, not all forested lands fall into the administrative "forest lands" category and not all lands within the "forest lands" category have forest cover.

The forest lands category is further divided into two categories: protected areas, which are reserved primarily for preservation and biodiversity conservation, and production forests, which are to be managed sustainably for timber and nontimber forest products (Oliva, 2007). The Philippines' forest lands have never been fully demarcated (Oliva, 2007). Presidential Decree 705, also known as the Revised Forestry Code, is the main law governing forest resources in the Philippines and dates to 1975. At the national level, the agency with primary responsibility for managing forest lands is the Department of Environment and Natural Resources (DENR) (Guiang and Castillo, 2006). Since the passage of the 1991 Local Government Code and issuance of its implementing measures in 1998, the DENR has devolved powers such as enforcement, protection, taxation, and extension to local government units (e.g., provinces and municipalities) (Magno, 2001).

The 1987 Constitution vests ownership rights to all forests in the public domain, as well as all natural resources other than agricultural lands, in the state (ROP, 1987). The 1987 Constitution further states that "The exploration, development, and utilization of natural resources shall be under the full control and supervision of the State." Additionally, all untitled lands with slopes greater than 18 percent are considered forest lands and thus belong to the state. Rights of alienation extend only to agricultural lands.

Prior to the 1990s, the DENR allocated most commercial harvesting rights to timber and other forest products, such as rattan and tree resins, through forest concessions or timber license agreements (TLAs) (Guiang and Castillo, 2006;Pulhin and Tapia, 2009). These agreements were costly to obtain and beyond the reach of most forest community residents, whether as individuals or groups (Arguiza et al., 2010; Walpole and Annawi, 2011). Additionally they were geared toward large-scale single product harvesting operations and

thus not tailored to the multi-use forest management approaches that most upland communities practiced (Walpole and Annawi, 2011).

In the 1980s and 1990s, DENR implemented several new types of forest agreements that sought to better meet the needs of forest communities (Pulhin and Tapia, 2009). The major tenure instruments that have been created to devolve rights and responsibilities over forests in the Philippines are Community-Based Forest Management Agreements (CBFMA), Certificates of Ancestral Domain Titles (CADT), and co-management agreements (MOA) between DENR and local government units (Pulhin and Tapia, 2009). DENR Administrative Order 22 of 1993 together with Executive Order 263 of 1995 are the legal basis for CBFMAs, the Indigenous Peoples Rights Act of 1997 authorizes the recognition of customary land claims in certain areas and also the issuance of CADTs, and the MOAs have their legal basis in the 1991 Local Government Code.

Under CBFMAs, the DENR transfers rights and responsibilities for forest management over to communities for 25 years, with an option to renew for another 25 years (Pulhin and Tapia, 2009). However, issuance of a CFMA is conditional on the completion of a DENR-approved management plan. Additionally, to obtain use rights to timber, CBFMA holders must apply for a Resource Use Permit, which is a lengthy process and the permit is always potentially subject to unilateral suspension or cancellation (Pulhin and Tapia, 2009). Nonetheless, the security of landholders under a CBFMA is much greater than it was before the CBFMA option existed as it protects the land from being allocated out to other users (Pulhin and Tapia, 2009). Moreover, the agreement provides CBFMA holders rights to extract resources other than timber, rights to farm, and the right to transfer use rights to family members.

Under a CADT, the right of the indigenous community to possess and own the land and resources located within their demarcated ancestral domain is formally recognized (Walpole and Annawi, 2011). They have rights of withdrawal, use, management, and exclusion but their rights stop short of full alienation, as the ownership rights can only be transferred to members of the indigenous community holding the title and the only with the approval of the state (through the National Commission on Indigenous People) (Pulhin and Tapia, 2009). While title holders have the right to develop their own rules governing the use and extraction of resources, those rules have to be consistent with the rules of the state (Pulhin and Tapia, 2009). Additionally holders of CADT are required to develop a DENR-approved Ancestral Domain Sustainable Development and Protection Plan (Arguiza et al., 2010). This requirement has proved to be time-consuming and costly as many DENR local offices have refused to recognize the plans as permits and have required that CADT holders obtain harvesting licenses (Arquiza et al., 2010).

The rights granted under a co-management Memorandum of Agreement between DENR and local government units vary but in general they are similar to those under a CBFMA except that the local government unit has formal regulatory and taxing authority over the land rather than the DENR (Pulhin and Tapia, 2009). The rights of individual members of the communities that are party to the agreement vary depending on the terms of the agreement, but can include rights to clear land for subsistence farming, rights to harvest agricultural crops and nontimber forest products, and the right to transfer land rights to family members or other MOA holders (Pulhin and Tapia, 2009).

Nearly 7.1 million acres of public domain forestlands are now held by indigenous communities under certificates of ancestral domain title or are the object of such claims (Blaser et al., 2011). Roughly 5500 communities manage 5.97 million hectares under CBFMAs. By contrast, only 783,000 hectares of land are managed under Integrated Forest Management Agreements, the DENR's standard timber concession instrument (Blaser et al., 2011).

15.3.2 TENURE SECURITY

The tenure instruments by which forest communities can acquire use and management rights to forests in the public domain vary in the degree of security that they provide. Certificate of Ancestral Domain Title convey permanent and exclusive use rights to the community to which it has been granted (Walpole and Annawi,

2011). CBFMAs and MOAs are less secure since they are subject to unilateral cancellation by DENR (Pulhin and Tapia, 2009). Indigenous peoples are further protected by a provision of the IPRA that requires free, prior and informed consent of indigenous communities whose lands are affected by outside actions, such as the allocation of mining concessions (Walpole and Annawi, 2011). However, the FPIC process written into the law is rigid, complex, and follows a time schedule that makes it difficult for many indigenous peoples to fully participate (Walpole and Annawi, 2011). The security conveyed by all of these tenure instruments depends in large part on the capacity of the communities holding them to assert their collective interests against outside interests and internal pressures (Arquiza et al., 2010; Walpole and Annawi, 2011). Moreover, having a CADT, CBFM or co-management MOA doesn't guarantee better management or more equitable distribution of resources as leaders can be vulnerable to pressure from outside and inside interests (Walpole and Annawi, 2011).

15.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Holders of CADTs have rights to exclude all other users. Difficulties with enforcement are chronic and pose an as-yet-unresolved issue with all of the new forms of devolved governance tenure instruments, in large part because in many instances, the DENR or the local government units lack the resources, the political will, or both to carry out their enforcement responsibilities (Guiang and Castillo, 2006). The capacity of indigenous and non-indigenous communities to enforce the rules on their own also varies greatly. On Palawan, for example, the Alangan Mangyan people's still-functional traditional "environmental police" system has enabled it to develop effective enforcement for its CADC area (Arguiza et al., 2010). Other indigenous peoples in the area retain greatly weakened collective action systems and are experiencing difficulties with enforcing rules over land covered under their titles (Arquiza et al., 2010).

15.4 USER GROUP ATTRIBUTES

15.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

The 25 million forest-dependent Filipinos are concentrated in the upland regions of the country (Poffenberger, 2006). Very little of the wealth generated from the Philippines' timber trade over the past century returned to the uplands and most residents of forest-based communities live in extreme poverty. The majority of upland residents depend heavily upon forests for their livelihoods. Migrant settlers from the lowlands practice slash and burn agriculture, clearing new fields from the forest when soil fertility in the already-cleared land declines. Some indigenous communities practice subsistence agriculture while others live primarily from products gathered in the forest. On the island of Palawan, rattan and resin from the almaciga tree (*Agathis philippinensis*) are important sources of income for several Indigenous Peoples (Arquiza et al., 2010). Many forest community members also are involved in logging (Pulhin and Tapia, 2009).

15.4.2 POWER RELATIONS

Timber and mining concessionaires have historically engaged in large-scale destructive forest practices in the Philippines, often with the explicit or complicit backing of corrupt forestry agents and government officials (Mayo-Anda, 2011). Upland communities have not accepted these practices willingly, and some have joined forces to mount successful resistance campaigns to potentially damaging projects, such as a proposed hydroelectric facility on the Chico River in Luzon (Magno, 2001). Forest communities, whether composed primarily of settlers from the lowlands or of indigenous peoples, increasingly have been able to enforce their rights over forests by working with well-connected international organizations or forming their own political action networks (Pulhin, 2002). In the 1990s, these efforts led to the passage of the Indigenous Peoples Rights Act in 1997, as well as to the administrative and executive orders that provide the legal basis for Community Based Forest Management Agreements (CBFMAs) (Puhlin, 2002). Since 2009, Code-REDD, a network of Filipino civil society advocates, has taken steps to demystify REDD+ for forest community

members (Code-REDD, 2011). Code-REDD has pressured the Filipino government to recognize community rights in its national REDD strategy and to engage in consultation processes at all levels of decision-making.

Relationships have also been tense between lowland settlers seeking to clear land for subsistence agriculture, tree plantations or agroforestry systems and the indigenous peoples already occupying those forests. Prior to the 1990s, land reform policies supportive of agricultural interests favored the settlers as few indigenous people or communities could afford to acquire land titles or forest product concessions (Walpole and Annawi, 2011). The balance of power shifted somewhat in the 1990s when indigenous communities acquired the option of obtaining Certificates of Ancestral Domain Claims under Department of Environment and Natural Resources' (DENR) Administrative Order 2 in 1993 and Titles of Ancestral Domain Claims under the provisions of the 1997 Indigenous Peoples Rights Act. However, implementation of these claims in many areas has been hampered by conflicts between Indigenous Peoples seeking to register their claims and settlers fearing the loss of access to forest resources in areas covered by those claims (Amos, 2003; Walpole and Annawi, 2011). To address these fears, some Indigenous Peoples, such as the Agta-Dumagat in the Aurora Province have invited migrant settlers and local government representatives to participate in land use planning for their titled Ancestral Domains (Amos, 2003).

15.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

The Philippines' forests have a high level of biodiversity and endemism, with more than 52,000 species found nowhere else in the world (Oliva, 2007). Many of these species are threatened by the rapid deforestation that took place during the latter half of the 20th century. As a result, international interest in protecting Filipino forests and in promoting sustainable forest management has been high for several decades. Initially the focus of programs was primarily on conservation and less on improving livelihoods, as with WWF's Debt-for-Nature swap in the late 1980s (Resor, 1997). However, the emergence of a strong framework for community forest management has led to sustained interest by international NGOs and bi-lateral and multi-lateral donors in funding initiatives that improve livelihood options while enhancing ecological conditions (Pulhin, 2002). National NGOs, such as Code-REDD and the Philippine Federation for Environmental Concerns have also played a critical role in further forest governance devolution (Pulhin, 2002). Interest in supporting sustainable forest management at the national and international level is tempered by economic and political incentives for maintaining policies that encourage activities likely to increase deforestation or forest degradation such as mining, hydropower developments, road-building, and large-scale biofuels plantations (Walpole and Annawi, 2011).

15.5 ECONOMIC ATTRIBUTES

Sheeran (2006) estimates that the opportunity cost of preserving a hectare of old growth dipterocarp forest land in the Philippines rather than using it for subsistence farming would be between $16,809 and $19,039. For second growth dipterocarp forests, the cost would fall to between $5373 and $7604. For pine forests, the opportunity costs would range between $11,023 and $13,254. The low figures are for a 3-year subsistence cycle and the high figures are for a 12-year subsistence cycle.

Potential methods for retaining land in forest cover in the Philipppines include REDD payments supporting alternative income generation for communities, payments for ecosystems services (PES), assistance with marketing certified forest products, and improved forest governance. Support for agroforestry operations coupled with small enterprise development and marketing programs would provide good investment opportunities.

15.6 OPPORTUNITIES FOR TENURE INVESTMENTS

Studies of forest governance devolution in the Philippines generally point to strong gains in environmental outcomes, including lower rates of illegal logging and less destructive forms of swidden clearing (Lasco and Pulhin, 2006; Pulhin and Tapia, 2009). Perhaps the strongest indication that community based forest

management is environmentally sustainable is the Philippines' recent shift from being a site of net deforestation to being a carbon sink (Blaser et al., 2011). Unfortunately, the livelihood gains from forest governance are much less apparent. Many more forest community members now have legal access to a wide range of resources on state forest lands (Arquiza et al., 2010; Pulhin and Tapia, 2009). However, it is unclear in some cases whether the incomes community members earn from harvesting these products differ substantially from what they used to earn when harvesting products illegally (Pulhin and Tapia, 2009). Devolution projects associated with reforestation or other donor-funded conservation or forest enterprise development projects have provided community members with short-term improvements in earnings, but it is unclear how sustainable these gains will be once donor support disappears (Guiang et al., 2001; Pulhin and Tapia, 2009).

The literature on forest governance devolution in the Philippines highlights three critical areas where improvements in the forest tenure system are needed.

- A major weakness of the current system is the high transaction costs and level of technical knowledge needed to complete the management plans for CBFMA agreements and the required Ancestral Domain Sustainable Development and Protection Plan for CADTs.

- A second weakness is the extent to which corruption appears to exist within the forestry sector, a situation which compounds the transaction costs problem as communities may have to pay multiple bribes to get management plans and resource use permits approved.

- Another third weakness of the current tenure system is that while they are an improvement over old-style Forest Management Agreements (i.e., timber concessions), CBFMAs have their basis in administrative law and are thus relatively insecure forms of tenure as they can potentially be revoked at any time at the discretion of the DENR. They also devolve fewer rights than CADTs.

The following tenure investments are steps that could be taken to address these weaknesses.

- Support for regulatory reforms that streamline the management plan process so as to reduce transaction costs and limit the opportunities for official corruption.

- Support for pilot projects to test out the feasibility of replacing the current cumbersome management plans with simplified versions that draw more extensively upon local forest management practices and ecological knowledge, and which are more likely to mesh with the technical and organizational capacity of forest communities.

- As a complementary program within the simplified management plan pilot project, support could be provided for developing a training program for community-level "para-foresters" who would serve as liaisons between the community and municipal and state forestry agencies.

- Support for legal reforms to provide a legislative rather than an administrative basis for the CBFM and MOA programs, modeled along the lines of Nepal's Community Forestry program. As Pulhin (2002: 37) observes, until CBFM is written into law, "it will always be vulnerable to alternative approaches, depending on thewhims and desires of the DENR executive."

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16.0 VIETNAM

16.1 FOREST ATTRIBUTES

16.1.1 FOREST SIZE, COMPOSITION, AND IMPORTANCE

Vietnam is a long narrow country in east Asia that is bordered by the Gulf of Tonkin and South China Sea to the east, Cambodia and Laos to the west, and China to the north. The country covers 330,000 km^2 and has a population of 81 million. The country's area in forest cover was reported to be 36 percent in 1980s, 28 percent in 1990, and 44 percent in 2010. Vietnam experienced rapid deforestation from 1954 to the mid-1980s but has had one of the fastest rates of overall afforestation in the developing world from 1990 to the present day (FAO, 2010; Matthews et al,. 2010). However, the increase in forest cover is due to extensive forest plantings, and significant areas of primary forest continue to be lost.

Three- fourths of the country consists of high mountains with a complex topography and steep slopes. The country's topography and its diversity of micro-climates explains its diversity of forest types, which include mangrove forests, muddy forests, monsoon forests, and evergreen deciduous forests on high and low mountains (Matthews et al., 2010). At present, 56 percent of Vietnam's forest land is in public ownership, 18 percent is in private ownership, and 26 percent is in other types of ownership.

16.1.2 CARBON STORAGE CHARACTERISTICS

Estimates of forest biomass carbon in Vietnam vary from a total of 774 Mt C to 1642 Mt C (Gibbs et al., 2007). Above ground forest carbon varies from 52 to 117 metric tons per ha (Holland et al. 2010). Holland et al. (2010) developed a prioritization scheme for REDD+ activities in Vietnam, with the highest priority being assigned to those areas with high levels of forest carbon stocks and a high likelihood of deforestation. The provinces of Dak Nong, Quang Binh, Lam Dong, Quang Nam, and Dak Lak as high priority for REDD activities based on a combination of carbon density and forest cover change. Vietnam was not included in the Forest Carbon Index developed by scientists working with Resources for the Future (Deveny et al., 2009) so the national-level risk factor associated with carbon investments is unclear.

16.1.3 REDD+ PLANNING AND ACTIVITIES

Vietnam is an active participant in both UN-REDD and the Forest Carbon Partnership Facility (FCPF). Vietnam's national REDD program was approved by UN-REDD (n.d.) in December 2009 and entered the inception and implementation stages in 2010. A number of strategic national-level activities and pilot district-level programs have been implemented in 2010/11, including a pilot process to seek free, prior and informed consent from communities. Vietnam submitted a revised Readiness Preparation Proposal (R-PP) (FCPF, 2010) to the FCPF that was reviewed by the Technical Advisory Panel in March 2011.

16.2 POLICY ATTRIBUTES

16.2.1 POLICY CONTEXT

After Vietnam gained its independence from France in 1954, the newly independent state nationalized its forests. A state entity, the State Forest Enterprises (SFE), managed these forests primarily for commercial timber. Intensive bombing by U.S. forces and widespread logging by communist insurgents during the war of 1959–1975 destroyed a large portion of Vietnam's forest. In the post-war period, large-scale deforestation continued, as millions of people resettled upland areas and cleared large areas of forest to produce

commercial crops such as coffee, pepper, sugar cane, rubber, and cassava. In the 1990s, the government implemented a policy known as the household responsibility system and encouraged immigration to the upland areas (especially Dak Lak province) to plant coffee (Kirk and Tuan 2009). Since 1995 Vietnam has been one of the world's largest coffee exporters and more than 5,000 km^2 is now under coffee cultivation.

The Land Law of 1993 played an important role in reducing deforestation by providing households with secure access to state-held land through long-term lease arrangements. With more secure land rights and support from extension services, farmers have tended to intensify crop production on lands already under cultivation. Intensification of agriculture on the most suitable areas allowed farmers to reduce use of marginal lands which were then allowed or regenerate or were planted in trees (Meyfroidt and Lambin, 2008; Matthews et al., 2010). Farmers have also been discouraged from practicing slash-and-burn agriculture and from expanding crop production into classified forest land. The Vietnamese government instituted a ban on logging in 1990 and a total ban on timber export in 1997, though illegal logging has continued, sometimes with the complicit support of corrupt government officials.

16.2.2 POLICY AND GOVERNANCE EFFECTIVENESS

Among the 16 countries included in this analysis, Vietnam has a relatively high WGI score for political stability (see Table 16.1). However, it has a relatively low score for voice and accountability. It experienced a slight improvement in its regulatory quality score between 2002 and 2009, but its score for government effectiveness declined during that same period. Vietnam had a Corruption Perceptions Index score of 2.9 in 2010, with a ranking of 112 out of the 178 countries included in the calculations.

TABLE 16.1: WORLDWIDE GOVERNANCE INDICATORS (WORLD BANK 2011)

(-2.5 to +2.5)	2009	2002	Direction
Voice and Accountability	-1.47	-1.50	+ (barely)
Political Stability	+0.24	+0.26	- (barely)
Government Effectiveness	-0.29	-0.45	-
Regulatory Quality	-0.60	-0.73	+
Rule of Law	-0.45	-0.50	+ (barely)
Control of Corruption	-0.52	-0.55	+(barely)
Corruption Perceptions Index = 2.9(Rank = 112 of 178) (Transparency International 2010)			

16.3 TENURE ATTRIBUTES

16.3.1 APPROACHES TO FOREST GOVERNANCE DEVOLUTION

In the initial post-war period (late 1970s through the 1980s), the centralized state managed the nation's forests through the Ministry of Forestry (which later became the Ministry of Agriculture and Rural Development (MARD). State Forest Enterprises (SFEs) under the supervision of line officers in MARD had responsibility for timber harvesting, reforestation, and other silivicultural operations (Nguyen and Sikor, 2011).[1] In the 1990s, the government initiated a Forest Land Allocation (FLA) policy designed to shift forest management rights and responsibilities to household and non-state groups. This policy was first articulated in the 1991 Forest Protection and Development Law, and implemented through a series of decrees over the next decade and a half.

[1] Vietnam's 2005 Law on Enterprises required that all state forest enterprises become independent companies by July 2010. The independent companies are now called State Operating Companies and they control about 37% of the nation's forest. The government no longer provides them with funding for forest management; however, it continues to provide financial assistance to the Forest Management Boards for protection and special use forests.

The FLA and related policies divide Vietnam's forests into production, protection, and special use forests (Thang et al., 2010; Tran and Burgers, 2012). Production forests are managed for commercial use, including timber harvesting, and typically are degraded areas for which the State wishes to provide incentives for individuals or groups to reforest. Protection forests are meant to protect critical land or water sources and NTFPs and timber harvest on these forests is restricted to domestic use. In the 1990s, protected forests were managed by SFEs, but since 2004 households or groups can also manage them. Special use forests are set aside for conserving special values. They include areas with exceptionally high biodiversity or threatened and endangered species, high tourist value, or cultural and historical heritage sites. Most special use forests are under state control, although there is movement toward giving communities a greater role in their management (Tran and Burgers, 2010). Protected forests and special use forests both have Forest Management Boards. The Forest Management Boards are established and funded by the state.

Forest governance devolution approaches in Vietnam fall into two basic categories: a) Forest land allocations, in which the state transfers extensive rights to households, groups, or since 2004, communities to production forest land on a long-term, renewable basis, and b) forest land contracts, in which the state enters into contracts with households, groups, or communities to pay them for reforestation and protection activities on protected, production, or special-use forest lands.

Forest Land Allocations (FLA): The process toward devolving rights over forests in Vietnam was supported by the 1993 Land Law which gave users long-term and renewable use rights through the issuance of titles known as "Red Books". Decree 02/CP issued in 1994 sought to extend similar rights to forest lands. The decree did not specify that Red Books (i.e., long-term, renewable use right titles) could be issued for forested land, an omission that resulted in considerable lack of clarity about the rights of holders of forest land Red Books. In 1999, Decree 163/1999/ND-CP replaced Decree 02/CP of 1994, and set into place a mechanism for issuing titles to allocated forest lands (Fey, 2007). The FLA has clearly been successful at expanding the involvement of non-state actors in forest management. By 2007, more than 1.1 million Red Books had been issued to users of forest lands, covering more than one-quarter of Vietnam's forest area (Nguyen and Sikor, 2011)

Households and organizations that have RBCs for production forest land have use rights that include agroforestry, livestock grazing, gathering NTFPs, and harvesting timber for house construction (see Box 16.1) (Nguyen et al., 2008). They also are entitled to between 75-100% of the value of any timber products sold[2] (the exact percentage varies depending on what condition the forest was in when allocated, or the type of investment funding for reforested lands), with the remainder (if any) going to the state. On protection forests, RBC holders receive payments for restoration and protection activities, they also have rights to harvest NTFPs, use a percentage of the land for farming and harvest timber provided that the forest cover remains at 60% or more of the area included in the allocation. Between 5 and 15% of the value of any timber harvested must be shared with the state. However, considerable confusion still surrounds Forest Land Allocation rights (Nguyen and Sikor, 2011: 8):

> [There is] a general lack of understanding by local communities on their rights and responsibilities regarding forests. In most instances, local people are only aware of their right to inherit the forest title, but not the other rights vested in the forestland certificates Similarly, they know that it is their responsibility to protect the allocated forest, but have little understanding of the responsibilities of others, particularly state actors, to support them in realizing their endowed rights.

The FLA policy has gone through a series of revisions over the past two decades. In 2000, allowance was made for agroforestry in areas designated as production forests and greater benefit sharing from exotic trees

[2] The percentage is calculated based on the value of the growth increment from the time the land was allocated, rather than on the full value of the timber at the time of sale.

that contract holders planted. In 2007, provisions were made for some forest land to be reallocated to poor households for residential and agricultural use. And in 2009, local participation was increased through provisions promoting greater local awareness, broadening participation in Forest Management Boards, and allowing rubber trees to be planted in protection and production forests.

Forest Land Contracts: Beginning in the early 1990s, Vietnam began investing heavily in programs aimed at reforesting degraded lands and protecting its remaining natural forests. In 1995, Decree 01/CP was enacted (Nguyen and Sikor, 2011), creating a process for the centralized government to contract out forest restoration and protection to households and groups. Contractees receive a payment, and have access to harvest NTFPs, farm, and carry out selective logging (with the revenue from the timber being shared with the state). Decision 178/2001/QD-TTg, which went into effect in 2001, was issued to provide guidance regarding benefit sharing on contracted or leased land. However, a study in 2009 found that the procedure laid out was so complex that it has been impractical to implement (Wode and Huy, 2009). Despite this drawback, more than 6 million ha had been contracted out under Vietnam's protection forestry programs by 2005 (Clement and Amezaga, 2009).

The emerging practice of community forest management: Despite the complications of benefit-sharing arrangements linked to the value of timber, in many respects, both the forest land allocation and forest land contract laws proved to be quite successful in providing households and groups with legal access to forest resources by the end of the 1990s and early 2000s. However, except in a few rare cases, whole communities were not legally able to participate in either the forest land allocation or the forest land contract systems. One notable exception was the province of Son La, which opted to allocate land to communities despite the lack of national level legislation recognizing such communities as legal entities (Clement and Amezaga, 2009). In 2003, a new Land Law was passed that recognized communities as having legal status to hold land. The 2004 Forest Protection and Development Law clarified that communities could also be legal managers of forests, and defined the process by which villages could become collective holders of forestland. In 2006, Vietnam initiated a pilot program to test out community forest management on a localized basis in 64 villages distributed in 10 provinces. However, a broader scale effort to implement community managed forests has yet to materialize, and only a small percentage of forest land (1%) is currently managed by communities (Nguyen and Sikor, 2011).

16.3.2 TENURE SECURITY

With each revision of the Land Law and Forest Land Allocation policy undertaken since 1996, household, and eventually community rights to land and forests have become more extensive. However, each policy change has been incremental and pragmatic and there continues to be considerable uncertainty about the actual rights of households, groups, and communities relative to protection and production Forest Management Boards and the State Forest Department.

16.3.3 EXCLUSIVITY OF USE AND ENFORCEMENT

Holders of Red Book Certificates (RBCs) have exclusive access to nontimber forest products, selected access to agroforestry products, and partial access to timber products. A study of 24 villages with community Red Book Certificates found that in villages having the titles enabled villagers to exclude other villagers, but in others, lack of support from local authorities and limited legal consequences of violations made it challenging to exclude outsiders (Nguyen et al. 2009). Various levels of the Vietnamese state can be drawn upon to enforce forest rights. This includes local representatives of the Commune People's Committee, the State Forest department, Forest Management Boards, and local user groups. However, there is concern about the capacity of Forest Management Boards and other officialslocal forest boards and officials to enforce forest laws. Additionally, in some villages lack of support from local authorities (specifically the Commune People's Committee, which has decision-making authority over forest land allocations) has made it difficult for them to exclude outsiders (Nguyen et al., 2009).

16.4 USER GROUP ATTRIBUTES

16.4.1 LIVELIHOOD DEPENDENCY ON FORESTS

Vietnam's upland areas are populated by a mix of indigenous ethnic groups who are long-term residents and former lowland residents who have migrated to the uplands over the last 35 years. The mix of indigenous groups and migrants varies greatly from province to province. As of 1990, it was estimated that about 2.9 million people from 400,000 ethnic minority families in 34 mountainous provinces were involved in shifting cultivation (Matthews et al., 2010). There are millions more upland residents who have migrated from the lowlands.

Vietnam's upland farmers are now known for having very strong commercial motivation and for shifting land use quickly depending upon world market conditions. The case of Dak Lak is instructive in this regard, as farmers have shifted over time from coffee to pepper and other major crops. With devolution, there is potential for rural residents to generate a larger share of their income through collection and sale of timber and nontimber forest products.

16.4.2 POWER RELATIONS

Vietnam has a long history of a decentralized power structure with provinces having a relatively large amount of autonomy in how they interpret and implement national guidelines. The main groups with a strong interest in exerting control over forest management are indigenous ethnic groups, migrants, local and district officials of the Communist People's Committee, and officials of the local Forest Management Boards. Among indigenous and migrant farmers, there are often significant wealth and power differences, which in the forestry sector can translate into conflicts over resource access. The state's ability (or in some cases political will) to enforce forest regulations is very weak. Despite having had a logging ban for more than a decade, Vietnam continues to have a chronic problem with illegal logging.

16.4.3 BROADER SOCIAL INTERESTS IN FOREST USE AND CONSERVATION

Although a relatively small country, Vietnam has a large diversity of habitats and species due to its long coastline and rugged topography (Zingerli , 2005). It supports upward of 12,000 plant species as well as unusually large numbersof fish, insect, bird, mammal, reptile, and amphibian species. More than 40% of its plant species are endemic to the country. Its high level of biodiversity makes Vietnam a major place of interest for a large number of international conservation organizations. The central government is particularly interested in the economic value of its biodiversity, which it sees as important both for deriving products, such as medicines and essential oils, and as a draw for ecotourism and recreation (Zingerli, 2005). Aside from its biodiversity values, Vietnam's forests are also important for their water conservation function, with sedimentation being a particularly problematic issue in areas that have been cleared due to the steep topography and heavy rainfall (Government of Vietnam, 2006). Vietnam depends heavily upon water reservoirs to produce hydropower and irrigation water. Run-off also affects the nation's biodiverse and nutrient-rich freshwater, brackish, and sea water ecosystems. Forest cover is particularly important for reducing the negative impacts of flooding, which is common in the Red River and Mekong deltas (de Jong et al., 2006).

16.5 ECONOMIC ATTRIBUTES

The 1980s saw the Fixed Cultivation and Resettlement Program and government-controlled migration to areas delineated as New Economic Zones. And, in the 1990s, a paradigm shift occurred in which Vietnam sought to move from a planned rural economy to a household responsibility system. This was coupled with the Forest Land Allocation (FLA) policy and increased market orientation, supported by investments in rural infrastructure and agricultural extension services promoting the adoption of new technologies (Muller and

Zeller, 2002). These policy changes contributed to an increase in population density, changes in prices and transaction costs, and availability of new technology.

Very clear interactions emerge between property rights and land use in the upland areas of Vietnam. With insecure property rights and encouragement to resettlement in the post-war decades, farmers in upland areas cleared large areas of land for the production of a variety of commercial crops, including coffee, pepper, sugar cane, rubber and cassava. With more secure land rights and support from extension services since the early 1990s, farmers have tended to intensify crop production on existing land, and plant tree plantations on more marginal lands.

Box 16.1: Experiences with devolution in Dak Lak Province

Vietnam's forest devolution experience started in Dak Lak Province and policy lessons in Dak Lak have benefitted the process throughout the country (Nguyen 2006). The village of Buon Diet was selected for devolution in 1998, and by 2000, 60 percent of the 35 households had been allocated 3.27 km^2 of forest (an average of 0.16 km^2 per household). The households received Red Book Certificates (RBCs) which specified their rights and obligations. Long term use rights included: (1) an unspecified, limited area of land for cultivation; (2) a 20-year timber quota for housing construction; (3) at maturity, a 6 percent share of the after-tax value of commercially logged timber for each year of protection; and (4) exclusive collection of nontimber forest products (NTFPs), with exemption from resource taxes. RBC obligations included acquiring prior approval from the state forest organization as well as forest maintenance and protection (patrolling to detect, stop and report unauthorized use and for fire control) (Nguyen 2006).

An assessment of forest devolution was undertaken in 2004 in 13 Dak Lak villages (Nguyen, 2006,;Sikor and Nguyen, 2007). The assessment showed that although both forest area and resources continued to decline, the rate of decline had slowed. Household income from harvesting forest products rose 170 percent to 22 percent of the level of crop revenue and 68 percent of the level of the revenue from non-farm sources. However, discrepancies in the devolution process limited progress in advancing the dual objectives of forest protection and enhanced livelihoods/equity. As the area of land for cultivation was unspecified, some villagers proceeded to clear land without prior approval, while others made no use of this provision. There was inadequate clarity in the benefit sharing mechanism as the calculation of timber benefit of 6 percent was difficult to determine given that it was tied to the forest growth increment (rather then the actual volume of timber sold) and therefore was impractical for villagers to measure. Moreover, the transactions costs of receiving prior approval from the state forest organization were so high that in most cases permission was not obtained. For example, none of the households who collected timber from the devolved forest between January 2001 and August 2002 possessed a logging permit (Nguyen, 2006). There was inadequate support from forestry staff for enforcement of detected illegal encroachment.

For non-RBC holders, devolution meant that in some cases villagers continued to use and make new claims to forest resources through customary tenure systems but without the legal support enjoyed by RBC holders. In other cases, villagers who depended on forest resources as their primary source of livelihood were excluded from areas they had previously used. In both cases, pre-existing social, political, and economic inequalities were exacerbated and the potential for inter-ethnic tensions increased (Nguyen, 2006; Sikor and Nguyen, 2007). The cause of these discrepancies can be found in part in the difficulty of crafting the devolution process to attend to the intricate juxtaposition of three factors: the coexistence of two divergent sets of institutions governing and regulating access to productive resources in Dak Lak; the pre-existing socio-political-economic inequities in Dak Lak; and the dual forest protection and livelihood/equity goals of devolution.

The two institutions governing access to resources in Dak Lak were the local, customary institutions and the state institutions. Local, customary forest institutions—including a system of fees and fines and other regulatory mechanisms (Poffenberger 1998)-- were used to govern access to resources on a "first see, first own" basis, and tended to favor their own leaders and the indigenous ethnic group at the cost of recent migrants (Nguyen 2006). State institutions center around the organization of the local Communal People's Committee (CPC) and the SFE (now SFOs). Of particular importance was the reciprocal mutual relationship of the SFE with paid local state officials in which the SFE provided economic and political benefits and state local officials protected the forest. State organizations placed a higher priority on forest protection than livelihoods or distributional equity and were characterized by top-down decision-making and implementation. So far, these state organizations have dominated all aspects of the devolution process in Dak Lak. The CPC selected villages, the local SFE decided the specific area of forest and number of recipient households, and village officials selected RBC recipients. Local state officials and their relatives were the main recipients of RBCs (Nguyen, 2006). This exacerbated the bias against migrants as all local state officials were of the indigenous Jarai ethnic group.

16.6 OPPORTUNITIES FOR TENURE INVESTMENT

Vietnam's household-oriented forest tenure reform has been very successful at reforesting large areas of lands that were cleared or degraded during the mid and late 20th century. It is unclear how well the household approach will perform over the long term given the complexity of the benefit-sharing calculations and the lack of transparency and accountability within the state forestry department. It is also unclear whether the household approach will work for natural forest management; and it is equally unclear how well the still-experimental communal forms of forest land allocations and forest land contracts will perform.

The lack of voice and accountability in Vietnam's governance structure are particularly problematic for the long-term success of efforts to devolve forest rights to communities. There are also questions about the effectiveness and equity of Vietnam's forest governance devolution approaches. The example from Dak Lak highlights the danger of elite capture of the benefits of community forests. It also reveals weaknesses in the capacity and perhaps political will of state forestry officials and Forest Management Boards to enforce forest use regulations. Moreover, while the pilot community forestry program has experienced some successes, the political will to invest a significant amount of human and financial resources into expanding the program appears to be lacking.

Recent studies of forest governance devolution in Vietnam have helped to identify some areas that deserve additional investment.

- Support for legislative reforms that would provide communities with legal status, thus enhancing the security of tenure associated with communally managed forest lands.
- Support for mulit-stakeholder policy dialogues oriented toward developing a less complex formula for calculating the benefits associated with FLAs and forest land contracts.
- Clarification and implementation of the criteria that should be used to identify and demarcate which forested areas are best kept under state management, which would be better managed by individuals, and which would thrive under community forest management (Nguyen et al. 2009).
- Enhanced communication about the rights and obligations of local Forest Management Boards, and the creation of more open and inclusive processes for devising appropriate management plans (Phung, 2011).
- Support to forest devolution processes that involve greater input from local user groups and more attention to how resources are allocated within user groups (Nguyen, 2006; Nguyen et al., 2009).
- Support for national and regional approaches to reducing illegal logging (FCPF, 2010).
- Support for REDD pilot activities, particularly related tobroad-based multi-stakeholder consultation, benefit sharing, and forest assessment (UN-REDD, n.d.).

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